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CALIFORNIA DERRICK

THE OIL AUTHORITY OF THE PACIFIC COAST

Vol. X SAN FRANCISCO, SEPTEMBER, 1916 No. 1

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THE OIL AUTHORITY OF THE PACIFIC COAST

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Oil Prospects in Ecuador

United States Consul General Frederich W. Golding, at Guayaquil, Ecuador, writes an interesting report relating to the increased petroleum possibilities of that country. In his report he says:

"Bituminous seams bearing small quantities of petroleum occur in various places in the northern provinces of Ecuador, where several claims have been located. The seepage there has been utilized by the Indians for cooking their food. Petroleum is said to exist in marketable quantities in the province of El Oro, near Santa Rosa, not far from the oil fields of Peru. The district comprises an extensive portion of the flat land of the province, which is intersected by a number of streams navigable for vessels of considerable draft, with an abundance of growing timber in the neighboring mountains available for construction purposes.

"The known deposits, where outflows are frequently found, occur in the desert peninsula, near the port of Santa Elena, extending from Puntilla, the most western point in Ecuador, eastward at least to the town of San Vicente. This oil field is 90 miles southeast from Guayaquil and 740 miles from Panama. There are telephone and telegraph services, and a good automobile road between the former city and the oil field. The surface of the country is nearly level, with minor undulations, and slightly inclined toward the sea.

"In this district the layer containing the petroleum, known by its black color, is blue shale of unknown thickness, superficial at some points and elsewhere covered with marine debris, is very spongy and rests on a base of impermeable sandstone which prevents much filtration, although it is impregnated with oil. It is nearly horizontal, of variable thickness, about three feet at the center and covers an area extending six miles north and south and about 20 miles inland. The presence of a small oil fountain, together with considerable gas, would indicate that deep drilling would produce flowing wells.

"Prior to the arrival of the Spaniards on these shores the Indians utilized the product, hardened by exposure in water-proofing their water jars, and other utensils. Since then it has been employed for calking the seams of coasting vessels. The present methods of collecting the oil is to excavate holes 10x10 feet square from 10 to 50 feet down to the impermeable sand-stone; seepage there is an annual yield of about 25,000 barrels. The output is limited to local demand. The wells produce from three months to three years.

"In 1910 a well had been sunk to about 150 feet, and another in 1913 to a similar depth, passing through several small veins of oil and strong gas, while a third of nearly 1,250 feet was nearly ready to begin operations, work with them being discontinued on account of lack of funds. Judging from the depths at which oil is found in the adjacent Lobitos field of Peru, it is believed that oil in commercial quantities will be reached here about 1000 feet. The deposits are similar to those at Lobitos and Negritos, which have yielded about 70,000 tons annually for some years. The latter has been a steady producer for more than 30 years.

"Drilling, including casing, costs about $7.50 per foot to a depth of 1,500 feet, and about $10 per foot to 2,500 feet. There is an abundance of native labor costing 50 to 75 cents per day, the drillers and mechanics must be brought from the interior, with wages from $100 to $150 per month.

"The petroleum produced in Ecuador, near the surface, has lost some of its volatile constituents, as a result of the methods of collecting it. An attempt was made at Santa Elena to refine it, but was later abandoned. A small plant situated at the beach, near there, treats limited quantities for the asphalt only, no effort being made to save the lighter oils.

"The Ecuadorean petroleum is now used for fuel at the local brewery and the electric light plant, where about 25,000 barrels are burned each year It is much more economical than wood or coal. The Guayaquil & Quinto railway requires about 32,000 tons of coal each year, at an average cost of $10 per ton. One third of each train is composed of cars loaded with coal for consumption by the locomotive; and as one ton of oil is equivalent to two tons of coal for producing steam, it is evident that with the same traction power used, much more freight can be handled. The price of crude petroleum at Guayaquil at present is $12 per ton for the native product. On account of the great saving in the cost of traction to this corporation, its officials have decided to change the locomotives from coal to oil burners. A pumping and storing plant at Duran, with tanks at various division terminals, and tank cars, have been decided upon at a cost of $75,000.

"A number of other industries in Ecuador would use crude oil for fuel if the supply was sufficient and constant. In the near future the river steamers, gas works, pumping stations and various local factories will use fuel oil exclusively for economical reasons. It is doubt-

ful, however, if large refining plants will be erected in Ecuador unless American interests do so as a part of their systems.

"Gas from the local petroleum is now being manufactured on a small scale at the local gas works, the yield 1,000 cubic feet to the ton, as against 300 cubic feet from coal. The gas company is planning to provide for an increased use of the oil.

"Recently a law was promulgated here exempting from all fiscal and municipal duties and taxes the production and exportation of petroleum and its derivatives for a period of twenty years. Some mineral tar is exported each year.

"The import duty on crude petroleum and kerosene as given in the tariff list, class 7, is 5 centavos (nearly 2½ cents.), and on gasoline, class 3, it is 1 centavo (nearly ½ cent.) per kilo, g. w., with 125.5 per cent. surcharge. The properties are freehold subject to the payment of an annual tax of 8 sucres ($3.85) per 20 hectares, equivalent to about 6.5 cents per acre.

"Ecuadorean oil-bearing properties are owned and controlled by local syndicates, but the proprietors are endeavoring to interest American capitalists in the development of this industry, with prospects of ultimate success.

Government Begs the Question

On another page of this issue of the Derrick will be found extracts from a recent government publication relating to the withdrawal of oil lands. It seems to be what lawyers term a "plea in avoidance" and is based on conditions existing subsequent to the act. It is a well known fact in law that a retroactive law is unconstitutional, and this being true it seems stretching things a little to claim that a deed was done because of grounds that have arisen since the act.

The author of this remarkable book states plainly what all of us know, that the act of withdrawal was not for the purpose of conservation yet he goes on to defend the withdrawal because it has the effect of conserving our oil for future generations and prevents waste and bad methods of operation.

It is also asserted that one of the reasons for withdrawal in 1909 was because of the necessity for securing adequate fuel supply for the navy, since the order was for the purpose of preserving the land for legitimate operators, it would strain one's imagination to understand how it would, at the same time, preserve it for the navy. The fact is that no order looking to oil as fuel for the navy came until 1912, or three years after the Taft withdrawal order.

Reading this book, and studying between the lines one is constrained to believe that the government finds itself in an untenable position and is trying to bolster up a defense for an indefensible action.

It was supposed to be temporary in its nature and it was distinctly for the purpose of preserving lands to actual prospectors and not for homesteaders. All of the excuses that can now be made in light of subsequent results cannot overshadow the actual condition of things. If Congress wants to be fair and just it will make an investigation that will give the light of day to the entire proposition and then act accordingly.

No Prosecutions of Magnates

The findings of the Federal Trade Commission in the gasoline investigation, has been postponed so often that oil men are wondering if there will ever come out anything that will make any difference. These investigations mean nothing much more than a soft job for a few men for several months, with a report that tells nothing that is not already known. The delay now is caused by a disagreement in the commission as to whether or not the report should touch on those matters that have been settled by the United States Supreme Court since the commission has started at work. It is now believed that the report will not be at all drastic, and that it will not lead to the prosecution of the Standard Oil magnates, whose scalps were supposed to be the prize of the investigation.

While the report will show what is called "hoggishness" on the part of some oil men there will be no evidence of illegal practices in keeping up the prices.

What will be shown has been clear to every oil man every day since the prices advanced. That gasoline can be made at a profit at a much lower figure than present selling price goes without saying. Gasoline can be manufactured at 9 cents a gallon and give a profit, but what is not taken into consideration is the fact that the demand has grown so enormously that it has been impossible to maintain the supply, and there is not a business man anywhere who will not take advantage of conditions that will permit an increase of price.

One of the fallacies of communism is that there should be no community of interest between supply and demand, but that commodities should be sold at a bare profit above cost of production. When there are more barrels of gasoline wanted than can be supplied the consumers are going to raise the prices themselves by bidding above the normal price to get that which their competitors want. The price goes up and the manufacturer and producer gets the blame. Hence the Governmental commission to find out what everybody knows.

If the idea of governmental control of prices of commodities should ever prevail there is such a wide field of endeavor that it will keep commissions at work for the next decade to regulate things. Take, for instance, the present price of fruits, vegetables, poultry products, dairy products, meats and other commodities used by every family. That prices should have advanced from 100 to 300 per cent in the past ten years without any adequate reason other than the desire of middlemen to get rich quickly, certainly deserves as much investigation as the advance in the price of gasoline.

The Two Candidates

There is nothing in a name. Mr. Wilson finds his namesake in the directory of every city in the country, and Mr. Hughes would have trouble in being distinguished if he looked in the same books.

There is much in a man. In times which try men's souls the real man stands forth, while the imitation man criticises. It is so easy to criticise that the world is full of critics who follow the easiest way. A critic can always say what he would have done under certain circumstances but it is an unsolved question whether he would have done so or not without the light of developments that is now shed on the circumstances.

Consequently when disposed to criticise the act or the non-act of President Wilson it is always well to remember that hindsight is better than foresight when it comes to criticism.

President Wilson stands for re-election, and his opponents bring out many acts that they think should have been different. They take no consideration of what the consequences might have been had other attitude been taken by the president. It is easy for the man who sits comfortably in his home, surrounded by his family and friends, to say that the president should have taken certain retaliatory action, even though it involved the nation in war. Yet that same critic would now be cursing the president had he done otherwise and taken steps that would have hal this country drenched in blood, even as are those across the Atlantic.

President Wilson undoubtedly has made mistakes. But keeping this country out of war has not been one of them.

The chief objection to Mr. Hughes in this campaign is that he is too much of a critic. His condemnation of President Wilson belittles Hughes rather than Wilson. In reply to the question "would you have gone to war" his answer was that he would have protected American citizens. He gives one to infer from that that President Wilson has not protected American citizens. That inference is not a correct one. President Wilson protected all American citizens when he brought Germany to time in the matter of sinking merchant vessels by submarines. It took him a long time to do it, but it was accomplished with the shedding of nothing more sanguinary than ink. Could he have accomplished more had he declared war and shed human blood?

He protected American citizens when he sent the army to the border of Mexico. He accomplished as much as he could have accomplished had he invaded Mexico and marched troops to the doors of Chapultepec with the loss of thousands of American lives and the accomplishment was completed as soon as it could have been under war conditions.

American traffickers in war material are demanding protection from the government while they carry on their nefarious trade with the warring nations of Europe. They would have the United States back them up with guns and American blood and this is one of the criticisms of President Wilson that will find little sympathy among the masses of the people. whose hearthstones would have been drenched to satisfy.

In considering what President Wilson has or has not done, at least be fair enough to take into consideration the emergencies that he has had to confront and not the after light that came when his action had been taken.

Mr. Hughes has shown himself to be a man of strength in his many opportunities of dealing with affairs of the state of New York and while on the supreme bench of the United States, but he has not been compelled to meet an emergency which might imperil the nation, and he is showing a smallness of nature not desirable in a candidate for president at a time when every interest of the nation must be guarded, sometimes against itself

World's Greatest Oil Tanker Dodges a Submarine

A story of British heroism at sea was told at the Great Eastern Hotel, London, recently when, on behalf of the directors of the Eagle Oil Transport Co., Ltd., and the Anglo-Mexican Petroleum Co., Ltd, presentations were made to Captain Jackson, the officers and crew of the steamship San Melito, one of the largest oil-carrying vessels in the world, which managed to escape from a German submarine. The recipients each received a silver model of a submarine and a cheque. The Hon. B. C. Pearson, who presided, said that when the vessel was one day out of Southampton, a German submarine was seen 300 yards away. Captain Jackson kept the vessel stern on the submarine, and the engine room staff got all the speed possible out of her. One member of the crew cooly sat on the deck peeling potatoes. The captain himself was stunned by splinters of a shell, and for forty minutes the submarine continued firing shells at the slow moving tank steamer. A torpedo discharged at the vessel exploded about 25 ft. away. In returning the presentation cheques duly signed, Lord Cowdray, the President of the Company wrote:

"I have seldom had greater pleasure in attaching my signature to anything than I have had in doing so to the cheques that will be presented to the Captain and officers of the San Melito. Express my great regret at not being able to be with my colleagues to do honor to the captain and officers of the Melito for their fine and gallant act in getting away from the submarine. So long as our breed continues to produce men of the character and determination displayed by them, I have no fear of great Britain's future."

Mr. J. Stanley Todd of the North of England Protecting & Indemnity Association, Newcastle-on-Tyne, wrote:

"It is one of the pleasing features of this ghastly war to see what an example the men of our Mercantile Marine alone have set, an example of absolute fearlessness which accords so well the same spirit as displayed by our fighting naval forces. Vast numbers of people in our country who know very little about the sea and its dangers cannot be made to realize what the men of our mercantile marine have done, and are doing for them, and the dangers they are braving with every mile of sea surface they traverse. We who are administering the Government War Risk Scheme in connection with the diversion of shipping know perhaps better than most laymen what those dangers are and the cheerful spirit with which they have been faced."

Politics and Ideals

Politics permeates everything in the United States. That is one of the results of an ideal. The American ideal is that every man is a king and has an equal right to the best there is to be had. The ideal of politics is for the place to seek the man, but the stern reality is that the men who seek the place so far outnumber the other kind that the place takes a back seat while the place hunters fight among themselves to see who can get the most out of the country.

It has reached such a stage now that politics permeates business. To succeed in business these days, especially if it be "big business" one must be a thorough politician. One must pull ropes, manipulate wires, and do all those other things that politicians are supposed to be doing all the time to maintain place.

The ideal office holder is the man who serves the country for the country's good. They are so few and far between that old Diogenes would need the oil of the Standard Oil Company to keep his lantern going long enough to find that ideal man.

Speaking of oil we are reminded that much of the present situation in the petroleum industry of the country is due to politics. Congress has been spurred to pernicious activity by a president who wants to regulate the business of the nation on lines laid down in books on philosophy. Then, all down the line, politicians of lesser degree have thought it necessary to follow the lead and the result is that the nation, today, is cursed with an epidemic of frenzied reform which goes even into the sacred precincts of the home to tell man and woman what they may or may not do; what they may or may not drink; may or may not wear.

California is specially cursed with an over-plus of politics. In the olden days men of a community got together in friendly way—sometimes—and decided that Jones, or Brown, or Smith, should go to a convention and represent them for the purpose of nominating candidates for the various offices. The results were usually good. At least they were far above the present day average of office holders. In those days the office holders felt themselves bound to respect the wishes of the people, because they were not so far removed as at present. Now the average office holder holds himself above his constituents and presumes to dictate to them.

Instead of having an election at most once in two years, now we have them every year as a regular thing with several others thrown in for good measure between times. And the people have to pay for them. Instead of the people getting together to send delegates to a convention, we now have a primary election, with all of the paraphernalia of a regular one, and the candidates, instead of being chosen by the people choose themselves. They put their names up and say they belong to a certain party. Then they seek the support of all other parties and go on the official ballot for the regular election representing widely divergent issues.

This is present day politics. It is the day of insanity that precedes ruin. It is a bad day for a community or for a nation when an elector is compelled to say that he votes for a man for office, not because he is a good and fit man, but because he is not so bad as the other fellow. Yet that is exactly the attitude of most of the voters at election times now.

A man's fitness for office never counts now. He is either the choice of a clique which desires to use him, or he is the choice of another clique which opposes the first clique. It is a condition that gave rise to the story of the countryman who was taken to task for sending a certain man to the legislature and whose reply was that they had to send him there or to the penitentiary and the penitentiary was full.

It is a bad day, indeed, when support must be given to the unfit because the fit will not, or cannot be nominated. It is the people who are to blame for this condition. They have permitted their power to be usurped through their own failure to exercise their franchise. Take any special election anywhere, at which vital interests of the people are at stake, and it will be seen that but a very small minority of the voters take enough interest to express themselves. They "let George do it" and take it for granted that it will be all right. In a recent election involving many million dollars to be expended by city officials, scarcely more than one tenth of the voters of a large city went to the polls. The money was voted and twenty-five per cent of it was wasted by incompetent and venal officials. The people grumble and growl, and next time they do exactly the same thing over again.

At the recent primary election in California there was a bitter fight waged for the nomination of a United States senator. So little was heard of the merits of either candidate, so far as his ability was concerned that one might be disposed to think that that was not a requisite for the office. That Governor Johnson was chosen as the Republican candidate does not mean that the people did not think Booth his equal in ability. It means that the people expressed a personal desire or were led by the personal desire of some other people.

Governor Johnson has made one of the best governors California has ever had, yet his record was assailed, his ideals bemeaned, his actions criticised, and every possible argument of a malicious mind was brought against him. He was accused of being a politician, when the people themselves compelled him to protect himself from assault by being politic. He was accused of everything that could be used against a politician, yet not once was his ability assailed.

That Hiram Johnson will be the next senator sent to Washington by California may be accepted without question, and it is indeed fortunate for California that the nation has become so accustomed to abuse as an argument, that it will give no thought to the assaults on Governor Johnson. At Washington he will rise above the mediocrity of the "millionaire's club" and become a man of the Nation, instead of the representative of the state.

SUED FOR REFUND

Louis R. Glavis, who was chief of the Pacific Coast division of the Land Office during the Ballinger-Pinchot controversy, took a trip to Washington, D. C., and Beverly, Mass., to confer with President Taft in regard to the Ballinger-Pinchot dispute. Glavis supported Pinchot and as special disbursing agent paid himself $320 for the expenses of the trip.

The Federal authorities ruled that Glavis' visit to confer with the President was unauthorized and have brought suit against him and his sureties to recover the $320.

Still an Infant Industry

Oil Production is still behind the consumption, notwithstanding the increasing output of the California wells. California wells have been greatly stimulated by the increased demand and higher prices, and while shipments are now falling off this is but seasonal and not a matter to cause discouragement or doubt.

Oil men who have studied the situation, not only here but all over the world, agree that the industry is but in its infancy. In substantiation of this statement it is pointed out that there has been an enormous development of gasoline production and gasoline business during the last three years, owing to the increased use of the gas engine, notable in the automobile, motor boat, aeroplane and farm tractor. Comparatively a few years ago gasoline was considered a waste product, and was burned under the stills in the refineries. Now its demand is so great that refineries are put to their wits' ends to get enough to supply the steadily increasing call.

Not even the most astute oil men of the country foresaw the enormous call that would come for gasoline nor did any of them see the enormous increase of opportunity for using this by-product. The growth of the big fortunes of oil men is not a result of their forethought or foresight, but is a natural sequence of an unforseen development.

That the present war in Europe has brought an enormous change in the petroleum industry goes without saying, and that this increased demand will not cease when the war is over is also equally patent. There will be even greater demand, probably, after the close of the war than at present, for then the shipments will be unhampered, and the demand for rehabilitation in Europe will make an insistent call for petroleum and its products.

With the falling off of production in the Midwest fields of Oklahoma, and Texas, and the practical cessation of Shipments from Mexico, with the decline of production in all of the Eastern fields, with Russia and Roumania set back for many years, even after the cessation of hostilities, the untried fields of California, Utah, Wyoming and Nevada will be prospected and developed and new fields will be opened in territories now declared by "experts" to be of no value.

Stocks above ground are rapidly vanishing and while there is now a seasonal decline in shipments, production must increase to maintain the equilibrium between the need of the world and the supply.

In California conditions have steadily improved. Statistics compiled from data furnished by the Independent Producers Agency show gross production, shipments and withdrawals from a storage for the first seven months of 1916 as follows, in barrels:

	Gross output.	Shipments	Shortage
Jan	6,936,785	6,963,161	26,376
Feb.	6,522,548	7,193,499	670,951
March	7,525,081	8,368,869	843,788
April	7,372,480	8,785,715	1,413,233
May	7,724,184	8,829,250	1,105,066
June	7,643,136	8,512,641	869,505
July	8,073,307	8,341,119	267,812
Totals	51,797,521	56,994,524	5,196,733

Well posted oil men say that the reduced call on stored supplies is due more to the falling off on account of the season than to over or increased production.

The frantic efforts of chemists connected with big companies to find chemical substitutes for many of the by-products of petroleum, is evidence that these companies see a depletion of supply in the near future and their present activity is but an evidence of a desire to meet a situation that is sure to come.

Taking all indications there is no reason for those interested in oil to be downhearted. The industry is increasing in importance every day.

A BIG OIL TRAIN

One hundred and eight carloads of oil went out of Bakersfield in a single train, early in August, being the largest train of oil in single shipment that has gone from the Kern fields for many months. The average daily shipment of the field is from 75 to 80 carloads.

DEVELOPMENTS AT CHINO

Land owners in the vicinity of Chino are becoming excited over reports that efforts are being made to develop a big oil field within six miles of that city. It is reported that 200 acres have been leased for twenty years to San Francisco parties by Alva R. McCarthy, and that the lessees are to develop the property for oil.

TRANSFERRING MONEY TO EUROPE BY WIRE

The Superintendent of the United States Naval Service receites the following as the requirements covering traffie through the Tuckerton, N. J., radio station pertaining to the transfer of money to Europe. The regulations cover only this class of communications:

(a) All such traffic to be in plain language, except Hungarian or other foreign names and addresses may be allowed provided such names are the persons to whom the money is to be paid, and that their addresses are proper ones. No code of any kind will be permitted.

(b) This traffic to be limited to eighty (80) words per message.

(c) Only one affidavit, in triplicate, covering all such traffic, will be required from responsible persons, firms, etc., provided such affidavit states that all such traffic to be filed will be neutral in character; that it will contain no code words and no words in foreign languages other than Hungarian or other foreign names and addresses; and that the Secretary of the Navy may hold sender responsible for violations of these requirements.

This affidavit is to be furnished, in triplicate, to this office.

OIL PROTECTION

John S. Chambers, State Controller, reports collections under the Oil Protection district act of 1915 of $77,609.17 out of a total assessment of $149,378.76.

This department is under the control of the State Mineralogist, who appoints the supervisor and deputies, makes the assessments, fixes the rates, and also with the Chairmen of the Board of Control and the Board of Equalization, sits as a Board of Review, correction and Equalization.

The State Controller collects the charges and the maintenance of the department is paid out of money so collected. The report just made by Controller Williams is the first under the law.

The first installment of the assessments of this fund became delinquent on the 14th of this month. Dr. Fletcher Hamilton issued due warning that after that date the prescribed penalty of 15 per cent would be added for delinquency.

California Derrick

The Oil Authority of the Pacific Coast

PUBLISHED MONTHLY
—BY—
The California Derrick Publishing Company
DR. CLARENCE E. EDWORDS .....Editor
E. L. MACKEY ..... Business Manager

OFFICES
509 Sansome Street, San Francisco, California
Telephone Sutter 2984
Editorial Rooms 417 Montgomery St., Room 422
Telephone Douglas 3617

Subscription price, per year, $2.00 Foreign $2.25
Advertising Rates on Application
Entered as second-class matter February 17, 1912, at the postoffice at San Francisco, Cal., under the Act of March 3, 1879.

THE DERRICK'S CREED

The California Derrick has no axe to grind, no company to promote, no stocks to sell, no "interests" to bow to. Not dominated by any company, but faithful to California's Oil Industry.

OAKLAND'S OPPORTUNITY

Oakland, in common with other progressive communities, has always professed a desire to have industrial activity, and to this end it has expended many thousand dollars through its Chamber of Commerce to enlist the interest of outside companies. It seems rather strange in light of this fact that so much opposition should have been shown to the proposed change of the charter which was voted recently, through which the city will be able to lease its water lots on its western front, and at the same time secure an adequate deep-water harbor.

The peculiarity of this opposition was that it seemed to rest entirely with a few members of the Chamber of Commerce, an institution maintained purely for the purpose of increasing Oakland's business. No satisfying reason was ever given by the opponents for their attitude, and it must, of necessity, be surmised that they were personal to the individuals who used their civic body to further their private ends.

But, be that as it may, the people of Oakland, by a heavy vote for a special election, endorsed the charter change and made it possible for the city to lease its worthless property, improve its waterfront, have its harbor and docks, and establish a great industrial center.

Oakland grasped the opportunity and should see to it that no carping pessimist shall obstruct the progress that is sure to follow the development of this part of the city. With every new factory that comes to the western waterfront there will be two come to other parts of the city, and what is good for sectional development means the greater good for the entire municipality.

There is much yet to be done to have the lease an accomplished fact and it might be well for Oakland to study well the methods of the obstructionists and see to it that they be not permitted to nullify by indirection that which the people themselves have said they want.

Oakland's opportunity is here. Let her take advantage of it.

ITO IS PLEASED WITH CALIFORNIA

Some months ago the Derrick had the pleasure of a visit from K. Ito, of the Nippon Oil Company, who was here investigating oil conditions and operating methods. He then expressed himself as astounded at the great industry in California, and said he would carry home with him many new ideas. That he had the right belief is indicated in the following extract from a talk that he recently made before a large audience at Tokyo:

"I heard so much about the anti-Japanese feeling existing in California, but none of our party could smell even a trace of it—at least among the oil men with whom I have spent most of my time. You may think that is because my olfactory nerve was blunted by smelling too much of crude oil and natural gas. Well, I don't know about it. I will tell you a real fact and let you decide it. We called on presidents and managers in their offices, as well as on drillers and roolies working in the field, bothering them with all sorts of questions and requests—with nothing to give in return, mind you. Not in a single instance were we denied. On the contrary we were received with open arms and every kind of courtesies were shown us. Valuable tips and wrinkles were given us for mere asking and some of them furnishing us with information which they will never give away to their neighbors. When we are comparing notes with them, and talking about common woes and trials incidental to the oil game, the sense of racial difference fades away and a fraternal spirit reigns supreme. They try to help us out just as a big brother would assist younger ones. I am glad I was afforded tonight a chance to bear a testimonial to the cordiality and broadmindedness of our brother oil men of California."

GENERAL PETROLEUM STOCK RELEASED

Welcome news came to the holders of certificates that the Mercantile Trust Company of San Francisco is now ready to release and deliver the new common stock of the General Petroleum Corporation.

According to a statement by R. M. Sims, trust officer of the Mercantile Trust Company, the new securities have been released by the committee and are ready for distribution. The Mercantile Trust Company received from the Bank of Montreal the single, full registered, first mortgage bond of the old company for $8,116,000 owned by the General Petroleum, Ltd., of London, and representing the first deposit of bonds under the original Weir plan.

The trust officials have been waiting for this bond, and on its receipt paid over to the Bank of California for account of Andrew Weir, $1,400,000 of new, first mortgage, ten year, 6 per cent bonds of the General Petroleum Corporation. This is what Weir gets in satisfaction of all his claims against the old General Petroleum Company, and it is $100,000 less than the original estimate. It represents the balance found by the arbitrator to whom the complex accounts of Weir and the company were submitted.

It is understood that the Central Petroleum Ltd., of London will be kept alive by the new Corporation for use abroad later as a marketing company. This company represents an outlay of $68,000 in cash for its incorporation, owing to heavy incorporation costs of England, and as a subsidiary will be needed there this will solve the question of expense. If the London corporation were permitted to lapse it would mean another large outlay of

cash when the new corporation decides to do business in Europe.

There is no better company in the field, so far as prospects and business is concerned, than the General Petroleum, and it is a matter of much pleasure to all oil men that the affairs of the company have reached settlement.

GOOD REPORTS FROM MEXICO

Conditions in Mexico are very similar to those in Europe so far as our ability to verify reports is concerned. What is going on in Europe has for the future to tell, and what is going on in the Mexican oil fields will be known when that distracted country comes out of its present turmoil. Latest reports are of the "good" class.

Representatives of practically all of the British and American oil companies operating in Mexico especially around Tampico, went to the City of Mexico recently to hold a gab-fest. It was termed a "conference of petroleum producers," and was held at the suggestion of the de facto government. It is stated by the oil men that the meeting resulted in a much better feeling between the oil interests and the Caranza government.

The government gave promise that it would make no attempt to put into effect the policy announced a few weeks ago of "nationalizing" the oil industry of the country, which plan was to take over all of the oil fields, wells, pipe lines, refineries and other properties at fixed prices of a board of condemnation to be appointed by the government.

At the conference it was made plain to the government by the representatives of the oil companies that any attempt at confiscating or nationalizing their holdings would be resisted to the end and that foreign governments would back them up in opposing such action. It was agreed at the conference that the new government tax on oil production shall be met without objection or obstruction, notwithstanding it is regarded as excessive.

The government of Mexico may be depended upon to get all that is coming out of any industry until such time as stability comes back. No president down there ever knows how soon he may have to take a trip to Europe for his health, and the prime object of officialdom in Mexico is preparedness for such emergencies. The oil men may think they have settled matters, but any day may bring some new idea that will have to be met.

GASOLINE MANUFACTURING EXPANDS

A large expansion in the gasoline manufacturing capacity of oil refiners in the country is taking place and the outlook is for greatly increased supplies of motor fuel. Notwithstanding the heavy and constantly growing demand for gasoline because of automobiles and other motor uses, there is great probability of the accumulation of large stocks by the refining companies next winter.

If refiners are able to lay in large supplies in winter, it is presumed that prices of gasoline next year will be far more reasonable than they were in the last few months. At the outset of this year refiners were practically without storage supplies and they went into the active automobile season relying solely on their refining capacity.

The increase in gasoline extraction has been brought about mainly by improved methods of refining. Standard Oil has taken the lead and through the Burton process has made available supplies of gasoline sufficient to keep the price within reason. Another important factor in increased gasoline yield is the lowering of the gravity. It has been found that 54 to 56 gravity gasoline is just as effective as a motor fuel as higher gravity gasoline. Refiners expect that 50 gravity will soon be in general use. A few years ago gravity was as high as 68 to 70.

The Burton system has been adopted by all the Standard refiners who, by reason of it, will be able, it is estimated, to double their gasoline output next year. This increase in production of gasoline is being accomplished with a corresponding increase in the production of crude oil. This, naturally, is strengthening the position of the big refiners and accounts, partially, for the stability of the market for refining stocks in the current decline in crude oil prices.

In 1915 the Standard company refined more than two-thirds of the gasoline output, according to figures submitted to the Federal Trade Commission. The total manufacture for the year was 1,075,000,000 gallons, of which Standard turned out 681,000,000 gallons.

In addition to what the Standard has done the refining capacity of independent interests has been increased and there has sprung up also many new refining companies which are exploiting their own systems of gasoline production.

GOOD GROWTH OF OIL EXPORT

Mineral oil exports for June, 1916, according to the Department of Commerce, totaled 220,963,989 gallons, which compares with 210,358,304 gallons in June, 1915. The value of the export products increased from $13,-351,634 in June 1915, to $19,414,857 in June, 1916.

For the 12 months of the fiscal year ending June 30 the total mineral oil exports were 2,413,563,904 gallons, valued at $164,234,318, which is a new high record, both for volume and value, in our overseas oil trade. The growth of the oil export trade in spite of the shortage of tank ships, is of such great significance that the following figures will be found interesting:

Fiscal Years	Gallons	Values
1916	2,413,563,904	$164,234,904
1915	2,187,340,610	133,693,275
1914	2,281,611,065	152,174,056
1913	1,989,772,713	137,237,762
1912	1,793.665,038	112,472,100
1910	1,546,067,984	99,090,212
1905	1,123,064,176	79,793,222
1900	1,081,744,231	75,611,750

These figures indicate a growth of 123 per cent in volume and 117 per cent in value since 1900. In the past four years the value of our oil exports have averaged close to $147,000,000. The time is not far distant when with the aid of the 60 odd tankships and cargo vessels now building for the American oil fleet, our overseas oil trade should reach an annual volume of $200,000,000.

At the present time the export demand for lubricants is so heavy and cargo so scarce that Standard Oil Co., of New Jersey and Vacuum Oil Co. each are chartering sailing vessels of all descriptions to carry barreled oil to Europe.

MONTEBELLO NOT ON THE MARKET

Reports have been current for some time that the Shell Oil Company has been negotiating for a lease of the Montebello Oil Company's Ventura field property, but these reports are now denied by officials of both companies. The Montebello people say emphatically that no offer has been made, and furthermore that the company is not for sale. The Shell Company has recently acquired extensive holdings in Ventura County, and this is believed to have given rise to the rumors.

Much Interest In Oil Developments

More interest is being shown, according to State Mining Bureau reports, in oil developments than at any time during the past three or four years, especially in the drilling being done in outlying districts. The fields along the coast are attracting particular attention, several wildcat wells being drilled in the Santa Maria, Ventura and Los Angeles regions. There is little or no indication of such rash and illy timed boom conditions as existed several years ago leading to overproduction and wasted money.

A recent accident at a well in the Belridge field, where the casing collapsed, pointedly calls attention to the requirements of the Bureau which has taken great pains to inform operators that facts as to well conditions should be promptly furnished in order that proper steps may be taken to protect and economically develop oil lands subject to damage from water. The exact cause of this particular though not uncommon accident is somewhat obscure but as it occurred during the time that the Bureau was waiting receipt of tardy information, in order to pass upon the method of cementing, special attention was called to the case. It will result in no change of procedure by the Bureau, which has repeatedly called attention to the fact that its work can only be of full value to operators when it is promptly furnished with all information. The Bureau does not wish to play the role of a policeman or detective, but is in the same position as a consulting engineer regularly employed by all the operators.

The reports of the State Mining Bureau for the week ending August 26, 1916, shows nine wells were started, making the total 472 since the first of the year. Twelve wells were reported ready for test of water shutoff, five for deepening or redrilling and one for abandonment.

During the past year the work of the Bureau has been almost entirely along the line of furnishing operators information as to the best methods to pursue in drilling new wells and abandoning old ones so as to protect their land from damage by water. The renewed activity in all the oil fields, due to the rise in price of oil, has directed the attention of many operators to the condition of old wells The Bureau has received many requests for information enabling operators to best repair their own old wells, and there have been numerous complaints as to conditions in neighboring old wells. The old records of many wells are now in possession of the Bureau and the others which are necessary will probably be obtained shortly. The recent receipt, by the State Treasurer, of the first installment of the assessment on oil and gas production and on oil lands, enables the Bureau to enlarge its engineering force so as to properly study and deal with the problem of improving old wells. The State Civil Service Commission conducted examinations to select the men and the following appointments have been made:

R. N. Ferguson will be stationed at Bakersfield and have charge of the Kern River field. R. D. Bush will assist in the work at Coalinga and the northern Kern County fields, and J. H. Dougherty will be located at Taft.

The collection of assessments gave an excellent opportunity to determine general opinion of oil men as to the value of the work being done by the State Mining Bureau. The only notable failure to pay was by the Federal Receiver in charge of numerous properties in Kern County. This failure to cooperate will, of course, hamper the protective work being done on properties adjoining those in charge of the Receiver and pointedly brings up the question as to the attitude of the Federal Government in dealing with oil lands in California where the word "conservation" not been infrequently used.

Associated Disappoints Stockholders

At the regular meeting of the Associated Oil Company the directors declared their usual dividend of $1 a share, payable in October. This is quite a disappointment to the stockholders who had reason to believe that there would be something like a "melon" cut at this meeting.

After the meeting R. P. Schwerin, vice-president and general manager of the company, gave a statement in which he outlined the projected improvements which the company has under way. In response to the statement that since the report for the company for the half year ending June 30, 1916, was by far the best showing in the history of the corporation, and that naturally the stockholders had a right to expect an extra dividend such as was paid last October, Mr. Schwerin said:

"Our refinery at Avon has a capacity of 22,000 barrels a day, and we are expanding right along both its capacity and its efficiency, believing that such a course is for the best interests of the company and its stockholders.

"I would also direct your attention to the fact that the Associated Oil Company has acquired the right to use the Rittman process by an arrangement perfected with the United States Government.

"An experiment plant has been established at Caspar, Wyoming, and we have an engineer on the spot carefully watching operations in order that should we deem it wise to establish a similar plant here, we may benefit by any mistakes that may be made at Caspar.

"You will understand that the Rittman process has not yet been placed upon a firm commercial basis.

"In reply to your question concerning the passing of the dividend on the Amalgamated Oil Company's stock, I may say that this suspension of dividends is, as I understand it, merely temporary."

Although Vice-President Schwerin declined to commit himself in detail with regard to the future policies of the company, it is understood that the refining capacity of the Associated Oil Company is to be very materially expanded so that it will rival the gigantic works which the Standard Oil Company of California has established at Richmond. These works, it is understood, are capable of handling 65,000 barrels of crude oil a day.

The regular dividend on the stock of the Sterling Oil Company was declared.

Oil Prospecting In Oklahoma

J. J. Moroney, who, while looking after the interests of the Okmulgee, Okla., Democrat, keeps a close view of the petroleum situation of that state, is inclined to be optimistic regarding the developments, and points out that while the present does not seem to be very propitious for operators, the sinking of from 1,400 to 1,600 wells a month looks like good business. In a recent review of the situation the Democrat says:

"The facts which obtain in production conditions really do justify conservation. There are various theories advanced as to what the deep mysterious purpose may be which is behind the movement. These are born of the very natural habit of belief on the part of men which attaches some suspicion to every market move on the part of the big house. There may be some justice in these suspicions in the present juncture and it may be that there is a purpose to get some one or some bunch. But there is no evidence that the production figures have grown until they have practically approached the consumptive demand figures and possibly passed them slightly. There is no question about that. Stocks in light oils were probably drawn upon very little if at all in the month of June. The official figures not being out as yet, only a guess is possible and our guess is that the two columns, production and consumption, were not far out of balance. They were nearer to balancing by half a million barrels in May than they were in April. Now, it cannot be questioned as a matter of reason that if there is as much or more being produced as is being consumed, it is not a good time for continuing the drilling of 1,400 to 1,600 wells per month. Probably a curtailment of that rate of drilling to about 1,000 wells a month would be better.

The situation has not in it the cause for a panic which would be the case if all this were due to the discovery of some pool like Cushing or Glenn. The curtailment of drilling is the sane plan and appeals to the business sense of everybody. It will come. Further, the situation presents not even the semblance of 'overproduction' nor even of 'congestion' except in the Augusta field in Kansas where present line capacity is being doubled. The relief it seems ought to come very shortly.

"Finally, is it not, after all, in the right view, the broad view of the situation a matter to justify optimism rather than disheartenment? Even from the producer's viewpoint, is it not? The producer with oil to sell, at that? Here our two states have been drilling in a veritable madness of search for the crude which the markets have been giving the best prices for in all history. Since the first of the year there have been hardly short of 8,000 weils drilled in the two states. Think of it. Six months. The biggest 12 months' record ever made was 1913, with 8,851 wells drilled. Now would it not be a most discouraging fact to face and to consider if it were a fact, that the drilling of that number of wells did not raise the production a hundred thousand barrels in the two states? Would not that be some swell comment upon the states and the fields in which we were casting our lots and our future? The production has been raised over 100,000 barrels by the drilling of somewhere in the neighborhood of 8,000 wells and the day to be a bit more conservative in drilling has come. That is about all there is to the situation."

WESTERN UNION OIL INCREASES PROFITS

According to a recent financial statement sent to its stockholders the Western Union Oil Company, during the fiscal year ending March 31, 1916, earned net, $213,-210. 29, an increase of $51,904.18 over the same period of the previous year. The net earnings were 21.32 per cent of the total issued par value of stock, and dividends at the rate of 10 per cent per annum were paid on the stock during the year. The remainder of over 11 per cent was carried over into the surplus account for the purpose of increasing the bank reserve of the company and the fund for development of new wells. The total gross oil produced during the year by the company amounted to 710,234 barrels.

UNION OIL TO SHARE PROFITS

A new profit sharing plan whereby the employes of the Union Oil Company may secure a percentage above their regular salaries and wages has been worked out and put in operation by the directors of the company. The profit sharing comes to the faithful and loyal workers and in some instances will reach as high as ten per cent of the employe's salary. It is plainly a matter of self protection on part of the company, for the announcement of the plan contains the following pertinent paragraph: "A company's best protection in its business is an organization of best possible efficiency."

This is a step in the right direction and one in which the California Derrick is a firm believer. The wage earners do more to make a company a success and when times become good they certainly should have the opportunity to share in the better conditions.

SOUTHERN PACIFIC CARES FOR EMPLOYES

Superintendent Whalen of the Los Angeles Division boasts of a school on wheels operated on the rails of the Southern Pacific Company.

An extra section gang is employed on this division and a box car has been fitted and furnished as a school. There are more than twenty-five children in atttendance with an able teacher to give instruction in regular school studies and the results have been satisfactory not only to the children themselves but have tended to attract a higher class of laborers. As the gang moves from place to place the school car is carried and the attendance of the children is regular. It is the intention of the company with the advance of the colder season to furnish a better class of car which will be more luxurious and will be more elaborately furnished.

In addition to this attitude of the Southern Pacific toward its employees a hospital car has been arranged for so that women or children in connection with the section gang on this division may received prompt attention in the event of sickness or accident.

In the latter part of July a "Fresh-Air" train, comprising nine new steel cars, left Portland, Oregon, for Salem. It was a "Fresh-Air Outing" given to 600 boys and girls of Portland's poor.

The mentality in the Southern Pacific system who directs and accomplishes these and many other kind movements for the benefit of the young is building better than he knows and refutes promptly the old axiom that "corporations are without souls."

California's Mineral Production for 1915

Mineral output in California during the year 1915 amounted to $96,663,369 worth of crude materials. There were forty-nine different mineral substances, and of the fifty-eight counties in the State all but two contributed some mineral product.

As compared with the 1914 output, the two notable features are the almost startling increases in some of the metals, and the decrease in petroleum, both in quantity and total value. The result, however, is a net increase in the grand total value of $3,348,596 over the 1914 total.

Of the metals: Antimony again entered the active list after an absence of several years. Copper increased over 10,000,000 pounds in amount and $3,114,192 in value. Gold increased $1,788,800. Quicksilver increased about one fourth in amount and more than doubled in value. Tungsten increased from a value of $180, 575 to $1,005, 467. Zinc increased from 399, 641 pounds, worth $20,381, to 13,043,411 pounds valued at $1,617,383!

Petroleum decreased approximately 12,000,000 barrels in amount, but the average price per barrel was slightly higher, so that the net result was a decrease in value of $3,983,272.

California yields commercially a greater number and variety of mineral products than any other State in the United States; and possesses latent possibilities in other items as yet undeveloped. The total annual value of her output is surpassed by but four other states—they being the great coal and iron producers of east of the Mississippi River. Of several items, including borax, chrome and magnesite, California is the sole producer. For several years we have been leading all others in gold, petroleum, platinum and tungsten; but surpassed in 1915, for the first time, in petroleum by Oklahoma.

The following table shows the yield of mineral substances of California for 1915, as compiled from the returns received at the State Mining Bureau, San Francisco, in answer to inquiries sent to producers:

Antimony Ore	510	tons	$ 35,666
Asbestos	143	tons	2,860
Barytes	410	tons	620
Bituminous rock	17,789	tons	61,468
Borax	67,004	tons	1,663,521
Brick	180,538	M.	1,678,756
Cement	4,918,275	bbls.	6,044,950
Chromite	3,725	tons	38,044
Clay — Pottery	157,866	tons	133,724
Coal	10,299	tons	26,662
Copper	40,968,966	lbs.	7,169,567
Dolomite	4,192	tons	14,504
Feldspar	1,800	tons	9,000
Fuller's Earth	692	tons	4,002
Gems			3,565
Gold (a)			22,442,296
Gypsum	20,200	tons	48,953
Infusorial earth	12,400	tons	62,000
Iron ore	724	tons	2,584
Lead	4,796,299	lbs.	225,426
Lime	356,534	bbls.	286,304
Limestone	146,324	tons	156,288
Lithis	91	tons	1,365
Magnesite	30,721	tons	283,461
Manganese ore	4,013	tons	49,098
Marble	22,186	cu. ft.	41,518
Mineral paint	310	tons	1,756
Mineral water	2,274,267	gals.	467,738
Natural gas	21,992,892	M. cu.ft.	1,706,480
Petroleum	91,146,620	bbls.	43,503,837
Platinum (a)	667	ounces	21,149
Potash	1,076	tons	19,391
Pumice	380	tons	6,400
Pyrite	92,462	tons	293,148
Quicksilver	14,199	flasks	1,157,449
Salt	169,028	tons	368,737
Sandstone	63,350	cu. ft.	8,438
Silica (sand and quartz)	28,904	tons	34,322
Silver (a)			851,129
Slate	1,000	squares	5,000
Soapstone & Talc	1,863	tons	14,750
Soda	5,799	tons	83,485
Stone, miscellaneous (b)			5,011,108
Tungsten concentrates	962	tons	1,005,467
Zinc	13,043,411	lbs.	1,617,383
Total Value,			$ 96,663,369

(a) Courtesy of U. S. Geological Survey.

(b) Includes granite macadam, rubble, paving blocks, sand and gravel, and grinding mill pebbles.

UNITED STATES LOANS TO FOREIGN POWERS

The United States has loaned to foreign powers since the commencement of the European war over $2,500,000,000, in addition to which American investors have purchased in foreign markets at bargain war prices securities which it is estimated will total in the neighborhood of $40,000,000.

The new $250,000,000 loan to the United Kingdom of Great Britain and Ireland "Two year, 5 per cent secured loan," gold notes, shows appreciably the steadily rising power of the United States in international finance. A year ago, on previous loans, England and France repudiated any idea of putting up collateral for the Anglo-French loan. The present loan is to be protected by security, the accredited value of which is at least $300,000,000. The Anglo-French loan of last October was for $500,000,000. The present $250,000,000 is the second largest issue ever marketed in this country. It must not be forgotten in the pledging of this collateral that Great Britain prefers in lieu of putting up all British, Canadian, and South American securities to include $100,000,000 of American securities which could have been easily and profitably sold in this market.

The new notes are being offered at 99 and interest yielding a shade over 5½ per cent.

NEW OPERATIONS BEGUN

Another oil company is preparing to drill on the North McKittrick front on a lease in the immediate neighborhood of the East Puente Oil Company, on section 11, 30-21, four and a half miles northwest of McKittrick. It is another case of secrecy and the name of the company that is depositing material on the ground is held in the dark.

UNION BUILDING A PIPE LINE

The Union Oil Company, through its subsidiary corporation, the Producers Transportation Company, will begin loading oil from the Fullerton fields in a short time at the San Pedro harbor, as the company has planned to increase the loading capacity each month to 300,000 barrels for shipment to various points on the Pacific Coast as far south as Chile. Work has been started on the construction of an eight-inch pipe line from Long Beach through Wilmington and San Pedro to the pier of the Outer Harbor Dock and Wharf Company, a distance of six miles.

OIL INSPECTOR FINISHES FIELD TOUR

State Oil and Gas Inspector R. P. McLaughlin recently made a tour of the oil fields, and during this tour he was called upon to make a decision regarding responsibility arising from the collapse of a string of casing. It was claimed by operators that the responsibility rested upon the State Mining Bureau because of its supervision of drilling operations. At Belridge a string of casing collapsed and in solving the question of responsibility it was brought out that the deputies of the bureau are governed entirely by logs and other information supplied them by the operators themselves, and all instructions and readings are given out from this data. In relation to the matter Inspector McLaughlin gave out the following item:

"It is very likely the bureau will be blamed if the facts were not understood. Operations were delayed by this department when a notice of intention to cement the well had been received and during this delay the casing collapsed. If the conditions are favorable the casing may be recovered with comparatively small financial loss, but on the other hand unfavorable conditions may mean a loss to the operator of several thousand dollars. The plan of operations at the well was changed after the original notice was received by this department. It was the first intention of the owners to drill only to the top sand, but when a neighboring well developed a good producing sand about 1000 feet lower an attempt was made to continue the well in question to the second sand. No notice of the change of plan, however, was given to this bureau until the well was some 300 feet below the top sand, when notice of intention to cement the casing at that point was given. Such procedure left a zone of about 300 feet below the top said which possibly contained water and if so would flood the sand. Acting under orders issued several months ago Deputy Supervisor M. J. Kirwan of Coalinga refused to approve a method until the facts were laid before him in the form of logs of adjoining wells and their condition so far as the presence of water was concerned. I am of the opinion that the failure to promptly furnish me all the information was due to a misunderstanding of what becomes necessary rather than an intention to ignore or defy the state law Such losses to operators are certainly regrettable, but this accident will not cause a change in the policy of demanding complete information before approving either methods or work.

"The Belridge field, particularly in its northerly extension, is proving to be a very productive neighborhood, but control of water conditions has not been thorough and the bureau will hereafter expect as strict attention to the matter as the operators of the other fields are already giving.

Pure gasoline for thirsty motors! Supplied by the "new town pumps" at every Standard service station, at thousands of garages, & at all agencies of the Standard Oil Company. Red Crown, the gasoline of quality, is a straight-distilled refinery product with power in every drop. It reduces your gasoline bills because every drop atomizes evenly through the carburetor and gives full power. Watch for the Red Crown sign

OIL ASSESSMENT DELINQUENT

First installment for assessment for the oil protection fund of the state became delinquent on August 14, at which time a penalty of 15 per cent was added. Those who overlooked this little matter should make their payments to the state treasurer at Sacramento.

ZEROLENE AT THE FRONT

The local Standard Oil agent recently received from J. E. Balsley, district sales manager of the Standard Oil Company at Phoenix, a report on the operation of the government automobiles and trucks along the Mexican border.

"A great many of these machines," writes Mr. Balsley, "are being lubricated with Zerolene oil. The intense heat and great amount of low gear work necessary in the sand make perhaps the best test possible of a motor oil. I am glad to report that Zerolene is doing the work in fine shape. Due to its asphalt-base origin, it keeps its lubricating value under the most trying heat conditions, and none of the machines have been at all bothered with carbon deposits in the cylinders."

WILL DRILL TWENTY FIVE WELLS

Secrecy which surrounds operations of the warring nations "somewhere in France" seems to have found its way to the oil fields of California. Scarce a day passes but something is reported regarding the great operations soon to be started in some mysterious district, with some mysterious company back of it. The latest development project is reported to be "somewhere on the North McKittrick Front," and the company that is to do some of the development is kept as far in the dark as the generals who lead the armies of France. The only thing about the matter that is told with any clarity is the fact the big company is going to sink twenty-five wells, and has signed contracts for the work. This is a rapidly growing field and any work done along lines of development will but prove the truth of the belief that it is one of the best in the state.

BRITISH RESTRICT GASOLINE SALE

Vice-Consul Hamilton C. Claiborne, who is stationed at Bradford, England writes as follows regarding the way England handles the sale of gasoline:

"Subsequently to the national stock taking of the supplies of gasoline in the British Isles, and based upon the figures revealed by the government census of motor fuel available for distribution, allotments were made upon an average basis of 25 per cent of the amounts applied for by the owners of private cars, 60 per cent for commercial cars, and 50 per cent for public vehicles, such as omnibuses and taxicabs. A maximum allowance of 30 gallons a month was fixed for private cars, and 2 gallons a month for motorcycles. Applications were made on the prescribed forms and warrants have been issued for a monthly supply by the 'Petrol Committee' or its subsidiary organizations. No gasoline can be purchased without such a warrant, and the amount obtained is indicated on the warrant at the time of sale by the seller.

"According to an articles published in The Autocar following a recent debate in the House of Commons, it was contended that the present shortage is due to a scarcity of 'tankers' rather than any failure of the world's supply."

REFINERIES MEAN BIG INVESTMENT

The Oil City Derrick has made a careful compilation of the business of the oil refineries of the United States, and has gathered some very interesting information anent the industry. In a recent issue it has the following to say:

"Total investment in oil refineries in the United States is estimated to exceed $428,000,000. The total capacity of the 302 refineries is more than 1,000,000 barrels of oil a day.

"Of the 1,000,000 barrels capacity, the Standard oil Co. owns 500,000 barrels

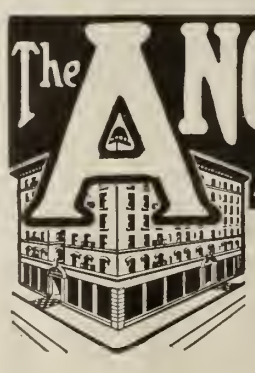
"Against the capacity of 1,000,000 barrels a day, the country is producing oil at the rate of slightly more than 800,000 barrels a day, the record for 1915 showing a daily average output of 834,000 barrels. If the total refining capacity were in operation, obviously there would not be enough oil.

"The value of the pipe lines supplying the refineries is $200,000,000, making a total of $628,000,000.

"More money is invested in the refining business in the state of New Jersey than in any other state, although no oil is produced there. California has the largest number of refineries.

"Of the refineries in the state of California 19 are not in operation.

"If plans materialize Kansas' refining capacity will be increased 50 p. c. during next year."



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California Concentrates

The San Francisco and McKittrick Oil Company is preparing to improve its wells by additional equipment.

The Suburban Oil Company is planning to erect three rigs on its property in the North McKittrick field.

The Union Oil Company is preparing to erect a large standard rig near Brawley for the purpose of prospecting a new field.

Daniel M. Sims, of Los Angeles, was appointed special master in the Midway-Northern oil cases, by Judge Robert F. Bean.

The Caliente Oil and Land Company has been incorporated at Los Angeles by L. V. Wilson, H. C. Farnum, and Emil Raymond. The capital is placed at $50,000.

The Berry and Keller Company will begin extensive operations, drilling several new wells in the McKittrick field, about the middle of this month.

Drilling is progressing well at the Balboa well in Mission Valley near San Diego. Gas is showing stronger than ever before.

The West Coast Oil Company has just completed its No. 70, in the Olinda section of the Fullerton field at 2,300 feet and it is producing 350 barrels a day.

The Southwestern Oil Company, recently incorporated is said to be making arrangements to locate on the North McKittrick Front.

The Bartolo Oil Company has incorporated at Los Angeles with a capital of $100,000. The incorporators are H. M. Marple, H. K. Bagley, Louis P. Tappeiner, G. C. O'Connell and E. Harris.

The Liberty Oil Company of Phoenix, Ariz., has been incorporated by William Foster, Elizabeth, Frederick and Ella Johnson, all of Los Angeles. The capital stock is placed at $50,000.

The directors of the Amalgamated Oil Company decided to pass dividend for the present and devote the earnings of the company to the development of the present holdings and the acquisition of additional property.

The Universal Petroleum Company has been incorporated at Phoenix, Ariz., by W. M. Smith, Francis Binder and Frank B. Smith. The capitalization is placed at $1,000,000.

The Red River Oil and Gas Company has incorporated at Phoenix, Ariz., with a capitalization of $5,000,000. Albert Buckley, Homer P. Allen and Albert W. Dunn are the incorporators.

The Bartolo Oil Company has spudded in its new well on its 600 acre lease on the Baldwin ranch. The operation is quite a distance from any productive district.

Standard Oil No. 6, in the Coyote district was brought in about the first of the month. At a depth of 3,900 feet a flow started which showed 25 and 26 degrees and produced 1000 barrels a day.

The Traders Oil Company, of Los Angeles, has asked the Railroad Commission to declare that it is not a public utility. The company owns a gas well but does not sell the product.

The Grant County Oil and Gas Company of Quincy Wash., has been organized with a capitalization of $250,000. The company will drill a test well near Quincy. The incorporators are William M. Clupp, H. B. Brown, P. B. Donaldson, Loren D. Harris.

The Pan-American Petroleum and Transportation Company, of which E. L. Doheny is president, is reported as having acquired the property of the Fairfield Oil Company in the North Midway district. Report says that the company will drill fifteen wells.

The General Petroleum Company has incorporated under its reorganization, with a capitalization of $16,702,400. The incorporators are R. E. Maynard, F. Chappellet, Lionel T. Barneson, William Walker, W. R. Kennedy, John Barneson, J. C. Celrain, John McKee, Percy T. Morgan and J. Henry Meyers.

The East Puente Annex Oil Company has been incorporated at San Diego with a capital of $100,000. The incorporators are George Harrison, Frederick Stearns and L. A. Blochman, of San Diego; A. L. Ellis, J. M. Roberts and Rufus Jackson, of Los Angeles, and E. A. Fano of Ocean Park.

One of the largest oil land deals in the history of California was consummated late in August when Superior Judge Coffey, of San Francisco, confirmed the sale of the 10,000 acre tract of the Thomas Bell estate, in the Santa Maria oil fields, to Edward L. Doheny, for $1,800,000.

The Petroleum Investment Company is a new corporation that has been started in Los Angeles, with a capitalization of $5,000,000. It will organize the Bell Rancho Company for development of the Bell Ranch which it will lease from E. L. Doheney. Four drilling rigs are to be put in operation as soon as they can be placed.

A NEW TEXAS GUSHER

Report comes from Houston, Texas, that an enormous gusher was brought in on the afternoon of August 23, on the property of the American Petroleum Corporation in the Goose creek district. This corporation also is reported as owning and controlling several producing wells on Goose Creek and as having large holdings, including some 14,000 acres of undeveloped land.

STANDARD ACTIVE AT MIDWAY

One of the busiest sections of the West Side oil fields in the Maricopa district is section 36-12, 24. Since taking over the leases of the M J. & M. & M. Consolidated company the Standard Oil Company has put a large number of men at work on the property, and it is stated that many new wells will be started in the near future.

MAY MAKE GASOLINE DIFFERENTLY

Van H. Manning of Washington, who is connected with the United States Bureau of Mines, is in California, and is much interested in the oil production of the States. He says the government experts are now making a survey of the oil supply of the country. He believes that the ever increasing motorization of the world, and the prodigious growth of gasoline consumption, will cause chemists of the coming generation to produce gasoline and other motor fuels from coal, coal tar, wood and many other commonplace sources.

ENGINE COMPANY ENLARGES PLANT

One of the first results of the recent merger of the Imperial Gas Engine Company and the Atlas Gas Engine Company into the Atlas-Imperial Engine Company, will be improvements of the Oakland plant at an expense of $25,000. The factory building will have an extension 80 by 250 feet.

DRILLING NEAR PISMO BEACH

The East Puente Oil Company,with headquarters at Los Angeles, which has successfully operated its properties in the McKittrick field, has taken over property of the Tiber Oil Company situated four miles from Pismo Beach, in San Louis Obispo county, and has a force of the men on the ground preparatory to drilling.

SHELL COMPANY DEVELOPS LEASE

The Shell Oil Company, which has a lease near the property of the State Consolidated Oil Company near Ventura, has begun the development of its lease. The development of oil in the new oil well of the State Consolidated has given the Shell people reason to feel assured of success in their well.

TEMBLOR FIELD AGAIN ACTIVE

The old Temblor field, near McKittrick, bids fair to come to life again after three years quietness. Much work was done in this field three years ago, but when the depression set in activity slackened. The Shear Petroleum Company, which owns seven wells in the district, 15 miles north of McKittrick, has started operations again and is now down nearly five hundred feet on a new well, with quite favorable indications of securing oil.

WILL DRILL NEW WELLS

The Kern Trading and Oil Company, which now has forty nine wells in operation on its properties in the McKittrick field, is preparing to sink four more on what is known as the Clara Foltz lease situated in the northwest corner of section 11, 20-21. This tract adjoins the property of the East Puente Oil Company on which the Kern Trading and Oil recently erected a rig. The average depth of producing wells in this vicinity is 1,300 feet, with a satisfactory yield.

SHALLOW FIELD AT VENTURA

Oil has been struck at a depth of 2,200 feet in the second well of the State Consolidated Oil Company, near Ventura. The first well of the company found oil at 2,300 feet. The oil in the second well of the same character as that in the first, being of high gravity and seemingly very abundant. The flow of this second well, with occasional gushing, has given much enthusiasm to the operators of the district, who look upon this development as being absolute proof of the permanancy of the field.

MEXICAN OIL COMPANY REGISTRATION

The Department of State is informed that the Ministry of Finance of the de facto Government of Mexico has promulgated a decree under date of September 4, 1916, which requires that companies engaged in the production of crude oil in Mexico register in the tax bureau of that ministry before September 15, 1916, or within 15 days of the first production, in the case of companies which have not yet produced oil. It is required that such registration be effected by only authorized representatives of such companies, and failure to comply with the provisions of the decree renders delinquents liable to a fine of 1000 pesos Mexican gold.

STANDARD ACTIVE NEAR COALINGA

The Standard Oil Company on Section 20, 19-15 is doing considerable work on the Coalinga Oil Company and Home Oil Company property now held by the Standard, near Coalinga. On the Coalinga property well No. 1 is being redrilled, and the drillers are rigging up to clean out. Two new locations for wells have been staked. Well No. 9, which has been abandoned for some time, is to be redrilled and cleaned out, and may be deepened. On the Home lease well No. 9 is being rigged up preparatory to cleaning the well. The properties are being put into good workable shape very rapidly under the new management.

SUMMARY OF DEVELOPMENTS AND PRODUCTION FOR ALL CALIFORNIA FIELDS FOR AUGUST IS AS FOLLOWS

An increase of approximately 1,000 barrels a day over July is recorded in the August estimate of production, which stands at 259,457 barrels daily, says the Standard Oil Bulletin. Shipments during the month averageing daily of 305,124 barrels were far in excess of figures of the previous month, and are the largest shipments in California's oil history The previous record shipment figure was 304,546 barrels daily during June of this year.

The decline in crude oil stocks resulting from excess shipments over production was 1,415,669 barrels.

Initial production from the fifty-one wells completed totaled 7,168 barrels daily.

FIELD	New Rigs	Drilling	Completed During Month	Abandoned	Wells Producing	Production Per Day
Kern River	13	21	8	2	1,838	22,550
McKittrick	5	9	..	.	290	8,876
Midway-Sunset	26	72	18	.	1,622	108,280
Lost Hills-Belridge	10	20	14	.	302	14,155
Coalinga	3	26	2	.	914	43,615
Lompoc and Santa Maria	3	12	2	.	235	12,705
Ventura County and Newhall	2	23	1	.	436	2,962
Los Angeles and Salt Lake	2	1	1	.	675	4,439
Whittier-Fullerton	10	66	5	.	642	41,645
Summerland	...	...	..	.	112	155
Watsonville	...	...	..	.	5	75
Total	74	250	51	2	7,071	259,457

Total crude oil stocks, August 31, 1916, 49,718,180 bbls.
Total shipments from fields, August, 1916, 9,458,850 bbls.

CRUDE OIL PRICES AT THE WELL

San Francisco, Cal., September 14, 1916. Effective July 7, 1916, Standard Oil Company offers the followlng prices for crude oil at the well.

Kern River, Midway-Sunset, Lost Hills-Belridge, Coalinga—14 deg. to and including 17.9 deg. gravity 63c. ped bbl; 18 deg. to and in cluding 18.9 deg. gravity 64 c. per bbl and for increace in gravity of one full degress above 18. gravity up to and inclusive of 24.9 deg. gravity, one (1) cent per barrel additional. 25 deg. to and including 25.9 deg. gravity 72c per bbl.; and for each increase in gravity of one (1) full degree above 25.o deg. gravity (2) cents per barrel additional.

Ventura County—25 deg. to and including 25.9 deg. gravity, 72c per bbl; and for each increase in gravity of one (1) full degree above 25.o deg gravity two (2) cents per barrel additional.

Whittier Fullerton Field—16 deg. to and including 17.9 deg. gravity, 63c per bbl.; .8 deg. to and including 18.9 deg. gravity 64c per barrel, and for each increase in gravity of one (1) full degree above 18.0 deg. gravity, up to and inclusive of 24.9 deg. gravity, one (1) cent per barrel additional. 25 deg. to and including 25.9 deg. gravity, 72c per barrel, and for each increase of one (1) full degree above 25.0 deg. gravity two (2) cents per barrel additional.

CLOSES BIG DEAL FOR OIL IN MIDWAY FIELD

One of the largest sales of oil by a producing company made in several months was consummated this week by the Midway Oil Co., when it sold the production of its property, composed of the Webster, Sage, Boston Pacific and J. B. Oil Co.'s leases to the Standard Oil Co. and the production of the Tannehill and Catfish leases to the Union Oil Co. The oil is that which has been accumulated by the company for the past year and which has been stored in sumps and reservoirs on the properties in anticipation of the higher prices which are now prevailing.

The deal which was put through was made to the market prices and will bring 63 cents per barrel for the larger portion and that which was delivered prior to the tenth of the month will bring 58 cents. The total amount of oil will amount to nearly 70,000 barrels.

HEAVY GOLD IMPORTS

The recent arrival at Baltimore of a steamer bringing $3,000,000 worth of gold bullion from the west coast of Africa would a few years ago have attracted universal notice. In the light of present happenings it becomes an ordinary incident, although it is practically the first time in history that any large quantity of bullion has reached this country direct from Southern Africa.

Between January 1 and July 1, the total imports of gold into the United States at all points amounted to $248,500,000; $100,000,000 in excess of amounts received for the corresponding period of the preceding year.

Since July of 1914 the United States has imported more than $732,000,000 of gold, with exports during the same period of $242,500,000. $138,500,000 were exported during the last six months of 1915. It is evident that practically since the beginning of the European war the United States balance of imported gold is about $490,000,000.

Comparison between the gold movements of the last fiscal year and previous years gives some idea of the new currents which the war has created. From England direct was received $118,000,000, as compared with $1,965,000 for the fiscal year ended June 30, 1915, and $2,500,000 for the fiscal year ended June 30, 1914. On the other hand only $15,000 was received direct from France during the last year, compared with $11,500,000 in 1915 and $1,200,000 in 1914. Imports from Canada during the last fiscal year amounted to $267,500,000, as compared with $110,700,000 the previous twelve months and only $38,300,000 for fiscal year 1914.

Gold imports from Mexico fell from $11,100,000 in 1914 to $6,000,000 in 1916. Imports from South America increased during the same period from $6,300,000 to $17,000,000. The United States imported $6,300,000 from China in 1915 and $1,600,000 during the last fiscal year, compared with nothing in the fiscal year 1914. Whereas in 1914 only $480,000 in gold came from Japan, the inflow in 1915 amounted to $17,700,000 and for the fiscal year just ended $9,200,000. From Australia was received $550,000 in 1914, $700,000 in 1915, but $39,300,000 for the fiscal year 1916. Imports designated as from "all other countries," which were represented by $410,000 in 1914, increased to $3,000,000 in 1915 and $6,700,000 last year.

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UNION OIL COMPANY PROSPECTING

Reports from the Imperial valley credit the Union Oil Company with having leased 12,000 acres from original locators, and say that a thorough test will be made of the new field at Kane Springs. It is claimed that $75,000 has been set aside by the company for the purpose of making the test.

MIDWEST REFINING COMPANY EARNS WELL

One of the big refining concerns of the Wyoming district is the Midwest Refining Company, which owns and controls extensive refining and producing properties in that state. Development of the Wyoming oil field gives promise of one day in the early future seeing that part of the country in the first rank as a producer. The Midwest Refining Company has done much, if not all toward the development of the barren hills into a producing section and its balance sheet of operations during 1915 shows that it is on a strong basis. The company has a capitalization of $20,000,000 and has no bonded indebtedness. The balance sheet of December 31, 1915, shows as follows:

ASSETS

Current assets:	
Cash in banks	$ 1,139,781.17
Notes receivable	37,697.11
Accounts receivable	580,952.35
Ref. prod. on hand	566,690.85
Supplies (inventory)	138,387.82
	$ 2,463,509.30
Deferred charges	31,620.70
Fixed assets:	
Prop leases, etc	$17,321,186.64
Investments	933,355.86
Construction, up to Dec. 31, 1914.	200,883.37
Construction, added during 1915.	116,195.83
Treasury stock	2,000,000.00
Total	$23,066,751.70

LIABILITIES

Current liabilities:	
Notes payable	$ 560,000.00
Accounts payable	725,758.22
Capital and surplus:	
Capital Stock	20,000,000.00
Surplus	1,780,993.58
Total	$23,066,751.70

It is announced that the company's earnings for the first half of 1916 exceeded $2,500,000, and it is reported that the earnings are now running in excess of 30 per cent per annum, on the outstanding capital stock.

Wyoming development has been slow because it has been a difficult matter to interest capital in a new country, but now, under the showing made by the Midwest Refining Company, there is a strong probability that much prospecting will be done in many parts of the country, especially down toward the Utah line. Oil indications are found in many of the hills and along the water courses of southwestern Wyoming, and there is no question that the pioneering of the Midwest Company will soon result on enormous development.

BENZOL PRODUCTION GREATLY INCREASED

The United States Geological Survey, in a recent report, gives much interesting data relating to the production of Benzol, which is so much needed in the production of certain dye stuffs. The report says:

"The awakening of the American people to the need for a dye industry and to a realization that such an industry cannot spring full grown from nothing but must be fostered and developed is now a well known story. Few are aware, however, of the progress that has been made within a year in laying the foundations for future progress in that industry. Under the spur of almost fabulous prices for benzol products, retort coke-oven plants throughout the country quickly installed elaborate benzol-recovery systems and now save the valuable oils that not very long ago were being buried or wasted, or, if saved, were begging for a market.

"In 1914 there were 14 benzol plants in the United States, but they were all controlled by one company, and therefore it is not feasible to publish the statistics of their production for that or previous years. Last year 16 additional coke plants were equipped with benzol apparatus, and the output was very greatly increased. The incentive for putting in this equipment was, of course, the opportunity to contract at war prices for benzol and other similar materials for use in making explosives for the European countries. When the demand from that source shall have ceased, the United States will be in possession of a large supply of the raw materials from which dyes and chemicals are made. The prompt and successful manner in which, in 1915, under favorable conditions, the producers increased the benzol supply and entered the field of dye manufacturing on a larger scale than ever before demonstrates the fact that in this country technical ability and business courage are not lacking and promises well for the future progress of the industry.

"More than 138,000,000 gallons of tar was obtained from coke ovens and sold for $3,568,384 in 1915.

"The ammonia, of which nearly 100,000 tons was reported as sulphate and the remainder as liquor (10,626,612 gallons) and anhydrous ammonia (30,002,196 pounds), brought a total of $9,867,475 to the producers. Surplus gas to the extent of 84,356,000,000 was sold or used. Of that quantity 17,196,000,000 feet was used as illuminating gas, 27,591,000,000 feet as domestic fuel, and 39,569,000,000 feet as fuel for steam raising, open-hearth furnaces, gas engines, and other industrial purposes. These by-products, which had a total value of $29,824,579, were obtained by the carbonization of 19,500,000 tons of coal, from which was also obtained 14,000,000 tons of coke, valued at $48,500,000. The total value of the coke and by-products was more than $78,300,000.

"The value of benzol products rose from less than $1,000,000 in 1914 to $7,760,000 in 1915, according to C. E. Lesher, of the United States Geological Survey, Department of the Interior."

The Pacific Tank and Pipe Company is expending a large amount in the construction of three different factory enterprises on ninety acres of land on the Oakland estuary, between Bay and High streets. Two of the buildings are practically completed and plans are being pushed actively for additional structures.

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Vol. X SAN FRANCISCO, OCTOBER, 1916 No. 2.

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Vol. X SAN FRANCISCO, OCTOBER, 1916 No. 2

What Petroleum Means to California

It is a well recognized fact that the petroleum industry has almost revolutionized business throughout the world. It has brought cheap fuel for our factories, for our locomotives and for our ships. It has given a motive power for vehicles that has changed the course of transportation. It has given material for the building of good roads. It has given to the medical world remedies that are of inestimable value. It has given lubricants that have driven from the field the old time oils from animals and vegetables. It has developed by-products that have revolutionized the dying industry. It has brought about the creation of special manufacturing plants to make necessary tools and machinery. It has given employment to millions of people in new industries that have followed in its wake. In fact it has been to the civilized world what mythical Alladin's lamp has been to romance.

It has populated the waste places of earth, peopled our oceans with ships and covered our lands with a network of railroads. It may well be said that coincident with the growing use of petroleum there has been an advance in all phases of civilization. Even modern warfare depends largely upon petroleum products for its success and it has been said by certain European Generals that the exclusive use of petroleum by any one nation would make it the conqueror of the world.

What the petroleum industry means to California can never be told in its entirety, for who is there to say just what ramifications reach out over the great state. Yet when it is remembered that of the total of 96,000,000 acres of land in California but 80,702 have been proven oil land, it will be seen what an infinitesimal part the petroleum bed is to the whole. Out of all of the rest of the area of the state it is estimated that not more than 80,000 acres more will ever be found to produce petroleum in paying quantities. Yet with this small part of the commonwealth devoted to the industry there has already developed an annual output of the product valued at more than $50,000,000. Employment is given to more than 50,000 people directly in the industry with fully 200,000 more dependent upon it as a means of livlihood.

In considering the petroleum industry in terms of money the figures are so large as to be almost incomprehensible. The ordinary mind grasps "one million" because we have heard much of what a million dollars means but when we get beyond that figure our minds are apt to be hazy as to the exact magnitude of the sum. A careful estimate of the total investment in the Petroleum industry in California places the figure at $250,000,000, while the annual expense on new wells is $6,000,000 and the redrilling of old wells makes an annual expenditure of $1,000,000. The 7,000 producing wells of the state cost in round numbers $100,000,000, and the total output of all the wells since the discovery of oil in California is valued at the enormons sum of $425,000,000.

The market value of the proven oil land of California is estimated in round numbers at $81,000,000. The value of the 2,000 miles of pipe line used for the transportation of California's petroleum is more than $40,000,000, while the thirty refineries of the state represent an investment of $15,000,000. The forty tank steamers used to transport the oil to other countries represent a total cost of $15,000,000 and the increased demand for steamers has added to this cost value $7,500,000 more.

Consequent upon the oil industry hundreds of other industries have arisen, all of which represent large investment of capital, actual figures of which are impossible but estimates can cover. Conservative figures place the investment in industries dependent wholly or in part upon the petroleum industry at more than $100,000,000.

The city of Los Angeles as a manufacturing center owes its prominence to fuel oil. Oakland and Richmond, both rapidly striding forward as manufacturing centers, would be without hope were it not for fuel oil. San Francisco would lose half of her manufacturing plants were she deprived of fuel oil. The cost of coast wise shipping and of railroad operation west of the Rockies would be increased materially were it not for the use of fuel oil. Dozens of manufacturing plants are existent solely for the purpose of manufacturing articles brought into use because of petroleum. Thousands of automobiles traverse our roads because gasoline makes the ideal fuel for motor driven vehicles. The good roads in California have been brought about because of the traffic of these motor driven vehicles, and the Country has been brought close to the City by the quick and easy means of access thus provided.

The income of the state has been increased by more than $2,000,000 a year through the taxing of these motor driven vehicles alone, while the total increased income through the petroleum industry is practically beyond calculation.

The following tabulation of the above figures gives in concrete form the financial end of the industry:

Acres of proven oil land	80,702	$ 81,000,000
Acres of unproven oil land.	80,000	8,000,000
Miles of pipe line	2,000	40,000,000
Number of refineries	30	15,000,000
Daily barrel capacity of refineries	175,000	
Number of tank steamers	40	22,500,000
Number of producing wells	7,000	100,000,000
Annual number of new wells	400	6,000,000
Number of producing companies	300	
Total companies	700	
Total investment in California		250,000,000
Annual output, barrels,	100,000,000	60,000,000
People employed	50,000	
People dependent	200,000	

California produces some forty seven commercial mineral substances yet the value of the petroleum output is materially greater than that of all the other mineral products combined. Were the president of the United States to presume to take such drastic measures against the gold industry of California as was done against the oil industry, the whole world would rise in protest, yet the gold industry is not one half as valuable as the petroleum industry. The gold, copper and other metals taken from California mines have done nothing toward developing otherwise useless land, while the petroleum industry has developed and recovered to agricultural use thousands of acres of arid and desert land.

What the petroleum industry means to California may be briefly summed up in the statement that it means development and progress of an empire. It means broadening of civilization and incidental development of all of the latent resources of Nature and Man. It means increased agricultural activity and development. It means employment to thousands of the best of citizens. It means the financing of hundreds of attendant enterprises. It means the establishment of a great manufacturing state with cheap fuel adjacent to raw material. It means the possibility of rearing a Manhood that will be the pride and bulwark of the Nation.

The Government Side

The United States Government has seen fit to make a voluminous explanation of the withdrawal of oil lands. In a big book Max W. Ball states the case in extenuation of the action of the president of the United States, and from a careful reading one can get nothing more nor less out of it than a complete justification of the operators who went on the oil lands in good faith and expended their time and money in development. According to Ball the withdrawals were to be used for the purpose of protecting operators, yet now they are ruining them. Read the following from Ball's book, and take it in light of present day conditions in the oil fields of California:

"It is not a question of preserving a supply for coming generations at the expense of this. Posterity will have to do without what the present generation needs and can wisely use. But today should be careful indeed lest it waste what tomorrow will need or unwisely use what tomorrow could put to better service.

"How is it with the oil situation in the public land states?

"Under a law which forces the operator to drill for oil lest he lose his land, and produce it lest his neighbor drain it from him, production has exceeded market demands during most of the last 10 years. The results? First large quantities of oil go into storge, where its more volatile, most valuable constituents are lost. It has been estimated that in California, for example, the value of oil lost by evaporization is perhaps 25 per cent of the value of the total production at the well. For, let it be emphasized, this loss represents the most valuable part of the oil. Second, the price is reduced to a point where oil is used as fuel without separating out the constituents that are of greater intrinsic value for other uses. The heavier parts of many oils are best adapted for use as steam fuel, but to burn the lighter under boilers is to put a limited resource to a use far lower than its maximum capability. And, again let it be emphasized, this loss represents the most valuable part of the oil. Thus one of the greatest assets of the American people is in part being dissipated—produced in advance of demand and used unwisely.

"As already suggested, these, losses are due to over-production, and over-production is due in large measure to a law that not only encourages but forces it. A reading of the chapter on oil land law will show how uncertain is a man's tenure until he has made an actual discovery of oil. Therefore, regardless of market or transportation conditions, regardless of the selling price of oil, he drills his discovery well. Then, because the law cuts the field into tracts so small that one tract may be almost wholly drained by wells on those surrounding, he drills more wells, regardless of whether he can dispose of his oil advantageously or at all, in order to prevent his neighbors from taking it from him. It may be that his profits would be greatly increased by leaving the oil in the ground for a few months or years; it may be that he is far-sighted enough to regret the waste resulting from premature production; but the law which demands discovery and restricts his acreage prohibits his free choice and forces him to produce. Not unlikely he or one of his neighbors in the haste with which they all must drill, lets water into the oil sand, perhaps to the ruin of the area and the loss of thousands of barrels of oil. He would have preferred to go more slowly, to study the relative location of water and oil horizons, to have a maximum amount of oil might be obtained, but the oil land law does not tend to encourage prudent or careful development. He must drill, drill quickly, drill continuously.

"Under such conditions and with such a law, a single expedient is inevitable; operations must be suspended as far as possible until a more adequate law can be provided. It will not do merely to urge the passage of a new law while allowing the old one to operate By the time Congress could act the damage would have

been done beyond repair. The public domain can never be repossessed and reconsolidated after it is once disposed of in small tracts. Every day under the placer law means the location of more small claims. The only solution is to suspend the operation of the placer law on all lands believed to be valuable for oil and gas.

"Such are the considerations which require and justify oil withdrawals today. Such were some of the considerations in 1909. When the thought of a fuel supply for the navy was dominant—a need which is now believed to be at least partly covered by two naval reserves in California and one in Wyoming. But, as a reading of the letters of November 11, 1909, and September, 17, 1909, will show, along with the question of naval supply was the question of ultimate public interest—the necessity for immediate action In such an emergency strong, even severe, measures are justified. The withdrawal order of September 27, 1909, was drafted and signed.

"That this was a severe measure, no one will attempt to deny. Without forewarning and without precedent, it knocked the breath, for the moment, from the California oil industry. Some of the orders promulgated since have been almost as severe, although not so widespread, in their effects. These things the officers responsible for them realize. The geologists who recommend or prepare withdrawal orders are not ignorant or careless of the hardships which they may cause. Many of them Western men, personally familiar with the field under consideration, knowing its people, knowing the sacrifices they may have made the hopes they may entertain of striking oil, these geologists regret keenly that the development of the West may by their action be in some measure retarded. Yet without hesitation or exception they recommend that the interests of the public be made paramount.

"The temporary character of the withdrawals can not be too strongly emphasized. There is no thought of tying up permanently the oil deposits on the public domain. As soon as there are satisfactory laws for the development of these deposits the withdrawals should be revoked, but in the meantime it seems certain that withdrawals will continue to be made, not as permanent institutions but as temporary expedients, to meet an abnormal condition, during a period when the needs of the situation have far outrun the adequacy of the law.

To Burn Oil on Two Warships

Preparations are being made at Mare Island for laying the keel of the United States Battleship California, the first of its kind to be driven by electricity generated by oil burning engines. Some time later a sister ship, the New Mexico, will be started at one of the Atlantic yards.

The California will be one of the wonders of the American navy. Not only will her propulsion be electric but the same power will perform all services aboard, will fire the guns, place ammunition, hoist and lower boats, raise anchors, steer the vessel, operate ventilating blowers and do the work of the kitchen, even to peeling potatoes, grinding meat, freezing ice cream and washing dishes. Steam turbines of 28,000 horsepower, burning oil fuel, will generate electricity. The arrangement of machinery is said to follow entirely new plans. Special attention has been paid to making the California and the New Mexico mine and torpedo proof, the many lessons of the European war being carefully studied to this end. It is expected that the ships will be marvels in these respects as well as in armament.

For some time before the plans for the California were made the Navy Department experts satisfied themselves by exhaustive tests that vessels of the proposed construction could not be sunk either by striking a mine or torpedo attack. It is understood that the construction of the bulkheads by an improved method is mainly relied upon to make the vessel impervious to torpedo and mine destruction. They are to be of steel, but will not be rigid as is the case in other ships.. Also resistance has been increased 25 to 30 per cent.

The principal characteristics of the California are as follows:

Length over all, 624 feet.
Breadth, 96 feet.
Depth, 47 ft 2 inches.
Mean draft, 30 ft. 3 inches.
Displacement (at this draft) 32,300 tons.
Speed, 21 knots (twelve hours).
Fuel oil capacity (normal), 1900 tons.
Armament:
Twelve 14-inch 50-caliber breech-loading rifles.
Four submerged torpedo tubes.
Twenty-two 5-inch rapid-fire guns.
Four six pounder guns for saluting.
Four 3-inch anti-aircraft guns.
One 3-inch landing gun.
Two 30-calibre machine guns.

The 14-inch main battery guns are of an exceptionally powerful type and will be mounted in threes, in four center-line, heavily armored turrets.

The complement of the vessel is fifty-eight officers and 1022 men. Every convenience necessary for the health and comfort of officers and crew has been carefully thought out in this ship.

The ship will be fitted with two cage masts bearing fire-control platforms for controlling the first of the guns, similar to the familiar type designed by American constructors and now fitted on all battleships of the United States navy. Another feature of her appearance that immediately attracts attention is the clipper type of bow instead of the conventional ram.

FOR RE-ELECTION

George W. Cabaniss

SUPERIOR JUDGE

(INCUMBENT)

Police Judge for Nine Years
Superior Judge for Eight Years

Candidate for re-election as Superior Judge

The Ideal Oil Barrel

When the majority of the people who use barrels for any purpose whatever, think of tight barrels they think in terms of Oak. The whole world has been ransacked for suitable oak timber for what has heretofore been considered the best of tight cooperage, but California produces a timber that is rapidly changing the prejudice, and it is due to a California cooperage concern, employing California labor and using this California product, that the petroleum shipper and producer is now getting away from the old ideas and is using what is known as the Fir Barrel

The California Barrel Company, of San Francisco is now catering to the oil and asphaltum trade consuming this line of cooperage, and in doing this the company has made careful investigation and selection of timbers until it reached the conclusion that the Douglas Fir has advantages over even the time honored Oak. The company is now specializing on the Fir barrel for oil and the tremendous success which has attended their venture as against the age long use of Oak shows that it is sometimes safe to do away with precedent and go into new fields.

The selected Fir used by the California Barrell Company has the advantage of adequate strength, much less of a tendency to shrink, warp or check than the oak and affords a material saving in transportation charges owing to its lightness, its weight being but 75 per cent of the oak barrel.

The California Oil Barrell, as the barrel made of the Douglas Fir is called, is the equal of the oak barrell in all things and it is superior in a number of important features. When it is properly made and set it does not have the same tendency to shrink, check and warp as is the case with the oil barrel made of oak.

While the California Oil Barrel has been on the market but a few years, it's value to the producer and shipper has become so well recognized that it is finding general use all over the world, and even in Japan where there is what may be termed a prohibitive tariff against cooperage, there is a constantly growing demand for this product of California.

One often speculates upon the vicarious value of the petroleum industry in California, and it is when we accidentally learn of some important industry like the manufacture of oil barrels from a California wood, that we realize that the ramifications of the petroleum product reach almost every field of endeavor.

What the California Barrel Company is doing in the manufacture of a barrel that is setting aside both age-long prejudice and use of a material is but one step in the many discoveries that have come through necessities arising from the industry that was unknown in California only a few short years ago. That the Douglas Fir is a remarkable timber has been known for many years, but it waited for the big cooperage company of San Francisco to discover that it was better than the timber from the tree that is surrounded with romance and historical record as well as utility, and the fact that the California Oil Barrel is rapidly supplanting the oak is at once a credit to the California Barrel Company and an honor to the State.

GENERAL PETROLEUM CORPORATION

After many vicissitudes one of California's great petroleum companies has reached firm ground, from a financial standpoint, and is now strong in every way. The General Petroleum Company and the General Pipe Line Company have been consolidated into the General Petroleum Corporation with a capitalization of $16,702,400.

The corporation owns in fee 8,946.8 acres of land in the several California oil fields, and holds leases on 2,189.09 additional acres of patented land, and has lease and locators rights on 12,518.15 other acres. It leases also in Mexico 24,070.52 acres in the oil fields and owns 317.86 acres waterfront for terminal site.

On the California lands there are 265 producing wells and eleven new wells drilling. From these wells there is an average daily output of 10,200 barrels. In addition to this the company handles about double that amount of oil either purchased or exchanged.

The Corporation owns and operates 240.91 miles of pipe line, taking oil from three gathering points, with 40 miles of gathering pipe lines. The capacity of these pipe lines is 50,000 barrels daily. The corporation owns one refinery, located at Vernon, Los Angeles county, which has a capacity of 750,000 barrels a month.

In addition to five distributing stations in California the Corporation operates four sea-going vessels, with a total capacity of 187,000 barrels, five inland water vessels, with a capacity of 19,250 barrels and twenty-eight tank cars with capacity of 6,316.50 barrels.

The total value of the exports of the company for the first six months of 1916, amounted to $499,624, and the range of operations covered the Pacific Coast from Alaska to South America, Hawaiian Islands, Japan, China, Arizona, Minnesota and Pennsylvania.

The total storage capacity of the corporation is 3,967,640 barrels. It has an average of 650 employes in California with an annual payroll of $800,000 in the state.

Make it UNANIMOUS

HIRAM JOHNSON
For United States Senator
NOMINEE OF
UNITED REPUBLICANS OF CALIFORNIA

ASSOCIATED GETS ELK HILLS LAND

A decision rendered by the United States General land office gives title to land in the Elk Hills district, valued at $4,000,000, to the Associated Oil Company. The Visalia Land Office gave the title to the Eight Oil Company, the discoverers of a bed of fullers earth. The land was then taken up as a mineral claim by the Eight Oil Company, and later John D. Gage, representing the Associated Oil Company, bought an interest from oil locators and the company then brought action to have the title of the Eight Oil Co. set aside on the ground that original location was a subterfuge and the men who first prospected the ground were aware of its value for oil development.

NEW OIL SECTION OPENED

A prominent oil field is being opened up in the Crimes Canyon district, in Ventura county, by the Oak Ridge Oil Company. Light oil has lately been discovered in two wells in considerable quantity, and the operators are concentrating their work on the development of the holdings pending establishment of pipe line facilities.

The Oak Ridge Oil Company has one well that is running about twenty five barrels a day, the oil running 32 gravity. The company is so well satisfied with this that it is drilling two more wells. The Santa Paula Oil Association, on a neightboring tract, has one shallow well that is yielding ten barrels a day of 30 gravity. It is using the output largely to drill a second well.

The district lies nine miles from the Montebello Oil Company's property, one of the most noted of the holdings in the county, near Fillmore and Santa Paula. It is rumored that W .P. Hammond has disposed of his holdings in this district to the Shell Company. These interests comprise the Oak Ridge and the Montebello and several other companies which are combined into a large syndicate, but this rumor is denied by A. E. Boynton, secretary of the Montebello.

MEXICAN OIL FOR THE UNITED STATES

Consul Claude I. Dawson, at Tampico, Mexico, under date of August 11, reports to the government at Washington as follows:

"July invoice declarations of shipments of crude petroleum and petroleum products to the United States in July, 1916, reached a total of 1,578,827 barrels for the entire district, of which 1,093,339 barrels went from Tampico and 485,488 barrels from Tuxpam. Other shipments reported amounted to 180,210 barrels from Tampico and 696,887 barrels from Tuxpam. In addition, 92,254 barrels invoiced and loaded in June were held over until July as a result of unusual local conditions. The gross shipments therefore totaled 2,548,178 barrels against 2,732,738 in May and 2,394,-829 in June.

"The Tuxpam oil movement showed a steady increase for several months; but at Tampico it has been stationary. It would have been heavier in July but for the political situation obtaining the first few days of the period, under which some shippers curtailed output and others ceased operations altogether; and the 25 per cents war tax imposed by local military decree acted as a bar to oil experts during the few days it was in effect.

"Oil shipments from the Tampico district from month to month bear little relation to the possible production, but rather reflect the state of the transportation market. In this respect there is constant improvement. The Petroleum Transport Co. (affiliated with the Huasteca and allied concerns) is rapidly augmenting its fleet of tankers. It is said to have 21 new ships building or contracted for, all to be of large carrying capacity. One of this fleet made its first voyage to Tampico in July, the George E. Paddleford. A constantly increasing number of new ships, each with two and three times the cargo capacity of the older vessels, will soon open the way for a much larger volume of oil shipments from the district."

PATENTS RECENTLY GRANTED

The following recently granted patents are reported expressly for the *California Derrick* by Joseph M. Nesbit, Patent Attorney, Park Building, Pittsburgh, Pa., from whom printed copies may be procured for 15 cents each:

Apparatus for use in connection with the distilling of petroleum and products therefrom, John L. Gray, Webster Groves, Mo., 1,192,889.

Tubing-Catcher, Robert Y. Watson, Taft, Cal., 1,193,-091.

Oil Saver and Sand Line Cap, Weslie M. Roades, Okmulgee, Okla., 1,193,187.

Measuring Line Reel Clamp, Weslie M. Roades, Okmulgee, Okla., assignor to United Iron Works Company, Okmulgee, Okla., 1,193,188.

Hydraulic Rotary Well Boring Tool, Willian Lincoln Dunn, Oxnard, Cal., assignor to The Dunn Manufacturing Company, Oxnard, Cal., 1,193,267.

Underreamer, Francis J. Fox, Pittsburgh, Pa., 1,-193,372.

Casing Spear and Trip Therefor, Harry C. Brewster, Shreveport, La., 1,193,452.

Method for converting higher boiling petroleum hydro-carbons into lower boiling petroleum hydrocarbons, George William Gray, Houston, Texas, 1,193,540, 1,193,541.

Pneumatic Fluid Lift, James K. Putnam, Tulsa, Okla., 1,193,609.

Deep Well Pump, Charles W. Bartholmes, Coalinga, Cal., 1,193,752.

Casing Plug, Robert W. Cushing, Leetonia, O., 1,193,769.

Process of treating petroleum and shale oils, Herman Willem Knottenbelt, Brussels, Belgium, 1,194,033.

Process of cracking Hydrocarbons, William August Hall, New York, N. Y., 1,194,289.

Cushioning and oiling means for deep well pumps, Robert M. Downie, Beaver Falls, Pa., assignor to Keystone Driller Company, Beaver Falls, Pa.

Wire ropes and cable cutting tool, John North Zahniser, Waynesburg, Pa., 1,194,461.

Sealing plug for oil wells, David C. Miller, Tulsa, Okla., 1,194,764.

Oil tank gage, Horace B. King, Boerne, Tex., 1,194,-846.

Casing Head for wells, Fred Joseph Moser, Kane, Pa., 1,194,863.

Slip socket, Clarence P. Williams, Syracuse, Ohio, 1,194,910.

Water Heating System for oil tanks, William R. Covan, New Lexington, Ohio, 1,194,960.

Steel derrick, Jesse F. Hilliard and Fayette Jones, Aitken, Pa., 1, 195,015.

California Derrick

The Oil Authority of the Pacific Coast

PUBLISHED MONTHLY
—BY—
The California Derrick Publishing Company
DR. CLARENCE E. EDWORDS .....Editor
E. L. MACKEY ..... Business Manager

OFFICES
509 Sansome Street, San Francisco, California
Telephone Sutter 2984
Editorial Rooms 417 Montgomery St., Room 422
Telephone Douglas 3617

Subscription price, per year, $2.00 **Foreign $2.25**
Advertising Rates on Application
Entered as second-class matter February 17, 1912, at the postoffice at San Francisco, Cal., under the Act of March 3, 1879.

THE DERRICK'S CREED

The California Derrick has no axe to grind, no company to promote, no stocks to sell, no "interests" to bow to. Not dominated by any company, but faithful to California's Oil Industry.

STANDARD OIL STOCK AT HIGH MARK

Before the government caused the Standard Oil Company to split up the highest price quoted for stock of the company was $750 a share. The recent flurry in the stock of the Jersey corporation advanced the price of share to, what would compare with conditions before the dissolution, more than $2,000 a share.

WASHBURNE OPENS OFFICE

Chester Washburne, formerly of the United States Geological Survey, announces the opening of an office at 66 Liberty street, New York City. He makes a specialty of Oil, Gas and Coal.

NEW OIL INSPECTOR APPOINTED

R. P. McLaughlin, State Oil and Gas Supervisor, has announced the appointment of R. N. Ferguson as deputy in charge of the work of the department in the Kern River, Sunset, Midway, McKittrick, Belridge and Lost Hills fields. The change is made necessary by the resignation of Deputy Supervisor Chester Naramore. Mr. Ferguson will have as assistants R. D. Bush, J. H. Dougherty and C. McGregor.

ANOTHER TRIUMPH FOR WESTERN AUTO OIL

It is reported that one of the biggest auto stage companies on the coast, operating lines over various parts of the state of California, has finally decided to hereafter use only western lubricating oil made from California asphalt-base crude. The decision comes, it is said, after many and varied experiences with different oils. The company's practical road tests proved the western oil to be not only the most efficient lubricant, but also the one to leave the least carbon.

This company operates about 80 automobiles in all, including Packard twin sixes, Cadillac eights, Whites and other high grade cars.

PREDICTS GASOLINE FAMINE

Dr. W. F. Rittman, inventor of the Rittman process of extracting gasoline, says in an interview in an eastern journal, that the world is facing a gasoline famine. He says that unless new fields are developed the supply of gasoline will be exhausted in a very short time. He says there are 3,000,000 automobiles in the United States with an average annual consumption per car of 500 gallons, making a total of a billion and a half gallons of gasoline consumed each year by automobiles alone.

But the worst is yet to come, for the United States is producing 8,000 new automobiles every day, and even then the demand exceeds the supply. With this outlook Dr. Rittman predicts an annual consumption of gasoline for automobiles of two billion gallons.

WHY GO ABROAD FOR IT?

Rumor has it that Mayor Rolph is deeply interested in the process for smelting ores with crude oil that has been discovered by some man in Spain. Mayor Rolph, as a good Californian, should look closer home for an outlet for his enterprise. In the California Derrick for July, 1915, a full report was given of the successful smelting of ores by the use of crude oil, and the process was so successful that it is now in operation in a plant in San Francisco.

The process was the invention and discovery of Californians, one of them a student at the University of California, and that it has not attained greater prominence is because it did not have a skillful promoter like the Spanish idea, to bring it to the attention of prominent men with money. Mayor Rolph should give California a chance first.

OIL MEN WIN BIG VICTORY

The United States Circuit Court of Appeals, sitting at St. Paul, Minn., has affirmed the decision of United States Judge John A. Riner, of Wyoming, rendered on January 31, last, upholding the validity of oil claims of the Ohio Company, in the Grass Creek oil fields of Wyoming. These claims were attacked by the United States under the withdrawal order. Thousands of acres of oil land in both Wyoming and California are affected by this decision, which means millions of dollars to the operators.

The decision is considered the most important affecting the oil industry since the withdrawal order issued by President Taft, in that it defines definitely the exceptions to the withdrawal act. It holds valid all oil claims held by companies which, while not actually drilling for oil at the time of the government withdrawals, were working in good faith toward this end.

MOTOR TRUCKS SHORT LIVED IN WAR

The frequency with which orders for American motor trucks are placed for use in the field of war may seem surprising to those whose idea of the life of a truck is guaged by their observation of trucks used in ordinary commercial pursuits. The life of a truck on the battle front, or engaged in transportation duty is sure to be brief, as it requires but a few weeks to place even the strongest of them out of commission. Replacement figures largely in the European orders, and if the war continues much longer it will means enormous reorders. From present indications it will be but a short time until not less than 150 heavy motor trucks will go forward from America to Europe every week.

The famous tractor fighting machines which England is using with so much success on the front, had its origin in California, at Stockton, where the first catapillar motors were built for farm work. The heavy fighting, armored car on caterpillar tractors has revolutionized the fighting at the trenches, because the construction of the self laying track is such that the monsters ride over everything just as the farm tractors rode over the heavy ploughed ground.

OIL STOCKS HEAVILY WITHDRAWN

Statistics prepared by the Independent Oil Producers Agency on the California petroleum industry for the month of September indicate that stocks were drawn on to the extent of 1,424,933 barrels, being about the same amount as was recorded for August. The total stock reduction since the first of the year now totals 8,090,713 barrels.

The production of all the leading districts during September, totaled 8,020,699 barrels, a daily average of 267,353 barrels against a daily average in August of 260,614 barrels, indicating an increase during September of about 6742 barrels a day.

Shipments in September amounted to 9,445,632 barrels, a daily average of 314,854 barrels,, establishing a new record for the movement of California crude oil for a single month. The next highest record was ruring the previous month, August, when the outgo figured 308,002 barrels daily.

MAGNITUDE OF PETROLEUM INDUSTRY

At the meeting of the National Petroleum Association, recently held in Chicago, the members present, themselves men well versed in the importance of the industry, were astonished by some of the figures presented. W. T. James, of Kansas City, predicted that the price of crude oil would advance to a point that would startle producers, was one of the probabilities of the near future. His figures regarding the output of the product showed a magnitude that gives some indication of what the discovery of petroleum means to the world.

The total output so far in 1916 exceeds $300,000,000 in value. The output for 1915 exceeded $225,000,000. This value exceeds that of all the ouput of silver, gold copper and iron.

What is significant in light of these figures is the fact that the demand for crude petroleum is constantly increasing, and the price advancing to meet this demand. That "Dollar Oil" will be reached and passed in California in the near future seems to be an accepted fact and even then the price is likely to go on until we will get back to the prices which prevailed several years ago.

DOHENY AFTER UNION OIL

Much speculation is indulged among oil men over the possibility of Edward J. Doheny becoming the controlling influence in the Union Oil Company. Reports from Los Angeles state that both Doheny and W. L. Stewart, president of the Union Oil Company, have gone East and it is believed that the object of their visit is to bring about the consummation of the deal for the controlling interest of the $35,000,000 corporation. Negotiations for stock in this company have been under way by Doheny for some time, and it is understood that a most important announcement will be forthcoming at an early date, as the big deal is said to be much nearer consummation than has been supposed.

Not the least important issue involved in the proposition is the listing of Union Oil stock on the New York Stock Exchange. The remarkable increase in the earning capacity of the Union Oil, as shown in its recent report to stockholders, has attracted wide attention among eastern financiers and they are ready and willing to back Doheny in his venture of obtaining control. Doheny is the only individual in the California oil business who is financially able to swing a deal of this magnitude.

The deal would mean much to the California oil industry, as Doheny already controls large properties in the state, and has been constantly adding to his holdings recently. He has now facilities, however, for handling and marketing the product, and sulh facilities would be acquired through the control of Union Oil.

Doheny's most recent purchase of oil land was on the North McKittrick front where he secured a tract from H. F. Collins and wife. The land is situated three miles east of where drilling is under way by the Standard Oil Company, the Sunbeam Oil Co., the Pacific Crude Co., and the W. S. Williams Co.

GROWTH OF STANDARD OF CALIFORNIA

No company in the Standard Oil Group shows such growth as the Standard Oil Company of California, and none of them exceeds it in capacity for further expansion. The future growth of the California Company has been greatly broadened recently by the withdrawal of the Standard of New York from the development of oil lands in China.

Possibilities of the Chinese market, especially in reference to Kerosene, are tremendous. Development of the Chinese market has been retarded since the outbreak of the European war because of the high ocean freight rates which precluded the getting of kerosene to China at a price at which it could be marketed. This difficulty is being overcome, however, by the construction of many new tank steamers, in which the Standard of California leads. At the present time the Standard of California's Ocean-going fleet has a total carrying capacity of 700,000 barrels.

In domestic trade, along the Pacific Coast, the Standard is the dominant interest, and in the last few months has invaded the eastern field making large shipments in tank cars.

The Standard of California was the first of the auxiliaries to reach a capitalization of $100,000,000, the size of the original Standard Company of New Jersey at the time of its dissolution in 1911.

The company is a complete oil organization, producing and with refining and transporting properties. It has more than $65,000,000 invested in plants, their capacity being 85,000 barrels of crude oil a day. The Point Richmond plant, on San Francisco Bay, has a daily capacity of 65,000 barrels. It has a pipe line capacity of more than 100,000 barrels a day.

General Petroleum Corporation has concluded a contract for the development of certain Mexican lands, with an Eastern corporation, the Mexican Gulf Company, for $90,000,000, which is expected to treble the production of the General Petroleum more than 15,000 barrels a day.

Large Convention Promised

"Legislation along several lines of great importance to the west should command the careful attention of all those interested in the development of the western states," says J. F. Callbreath, secretary of the American Mining congress, which opens its nineteenth annual session at Hotel La Salle, Chicago, November 13.

Mr. Callbreath says the convention promises to be the largest gathering of mining men ever assembled in the United States and will offer splendid opportunities for the western states to present their claims before prominent citizens of the east, which can give the congressional support necessary to accomplish the results the west needs.

Discussing the various issues now pending before Congress, Mr. Callbreath said:

"The next session of Congress will have under consideration the Foster bill, for revision of the mineral land laws of the west. It will be recalled that a bill for a commission to investigate conditions through public hearings in the western mining centers and make recommendations to Congress was introduced by Senator Reed Smoot and passed the Senate, but failed to receive the approval of the House Committee on Mines and Mining. In its stead, Dr. Foster, chairman of the committee, introduced a bill intended to meet the requirements without the preliminary work of a commission. This bill was severely criticized by the west and the mining journals. A thorough discussion of the subject will take place at the Chicago convention. Dr. Foster himself will lead the discussion and defend the plan he proposes. The discussion will be lively if the critics of his bill meet him on the floor. A plan for future action wil probably be outlined, and a campaign begun to bring about the practical legislation desired.

"The question of whether the Senate committee amendment to the Ferris land leasing bill shall prevail is of vital importance to the west. Whether the resources of the west are to pay endless tribute to the national government through a federal leasing system, or be subject to taxation by the states themselves, concerns directly every taxpayer. It is a question of home rule, with the western industries controlled by those who know them, as against control by a cumbersome agency 2000 miles away.

"The question will probably be finally determined at the next session of Congress. The bill has passed the House and is now before the Senate. The Senate will probably approve the recommendations of its committee, and, unless the west rallies to the support of the Senate committee recommendations, there is grave danger that the House will refuse its approval.

"These and other important questions will be considered at our Chicago Convention in November."

The proceedings of the American Mining congress convention this year will be held in sections, of which there will be six, each one devoted to a particular branch of mining activity. This arrangement, introduced into the proceedings of the congress this year for the first time, will enable each delegate to give his attention to the particular branch of the industry in which he is interested. Two entire floors of the La Salle hotel and several rooms on other floors have been engaged for the convention.

The question of a compensating tariff duty upon imports of lead, zinc and tungsten ores will occupy a foremost place in the discussions of the lead, zinc and tungsten sections.

CRUDE OIL PRICES AT THE WELL

Effective September 20, 1916, Standard Oil Company offers the following prices for crude oil at the well:

San Joaquin Valley Fields:— (Kern River, Midway-Sunset, McKittrick, Lost Hills-Belridge, Coalinga)

14 deg to and including 17.9 deg. gravity, 68c per barrel, 18 deg. to and including 18.9 deg. gravity, 69c per barrel, and for each increase in gravity of one full degree above 18.0 degrees gravity, up to and inclusive of 24.9 degrees gravity, one cent per barrel additional. 25 deg. to and including 25.9 deg. gravity, 77 c. per barrel, and for each increase in gravity of one full degree above 25 deg. gravity, up to and inclusive of 36.9 deg. gravity, two cents per barrel additional. 37 deg. to and including 37.9 deg. gravity, $1.02 per barrel, and for each increase in gravity of one full degree above 37 deg. gravity, three cents per barrel additional.

Ventura County:—

25 deg. to and including 25.9 deg. gravity, 77c per barrel, and for each increase in gravity of one full degree above 25.0 deg. gravity, up to and inclusive of 36.9 deg. gravity, two cents per barrel additional. 37 deg. to and including 37.9 deg. gravity, $1.02 per barrel, and for each increase in gravity of one full degree above 37 deg. gravity, three cents per barrel additional.

Whittier-Fullerton Field:—

16 deg. to and inclusive 17.9 deg. gravity, 68c, per barrel, 18 deg. to and including 18.9 deg. gravity, 69 cents per barrel, and for each increase in gravity of one full degree above 18 deg. gravity, up to and inclusive of 24.9 deg. gravity, one cent per barrell additional.

25 deg. to and including 25.9 deg. gravity, 77c per barrel, and for each increase in gravity of one full degree above 25 deg. gravity, up to and inclusive of 36.9 deg. gravity, two cents per barrel additional. 37 deg. to and including 37.9 deg. gravity, $1.02 per barrel, and for each increase in gravity of one full degree above 37 deg. gravity, three cents per barrel additional.

All grades up to 36.9 deg. gravity advanced five cents per barrel; 37 deg. gravity and above advanced six cents and upward per barrel; last preceding price change announced July 7, 1916.

RAILROADS USE MUCH OIL

During the past year the railroads of the United States showed a marked increase in the amount of oil used in engines. According to data prepared by the United States Geological Survey the oil fuel consumed by locomotives last year amounted to 136,648,466 barrels, an increase of 5,555,200 barrels, or 18 per cent over a similar consumption of the previous year. This increase is ascribed to the relatively low price of fuel grades of oil during the past year and a half owing to the enormous production of low-grade fuel oil in the gulf coast states and Mexico.

SOUTHERN PACIFIC
SUNSET OGDEN & SHASTA ROUTES

FIRST IN SAFETY

CHOICE
OF
Four Routes
East
From San Francisco

"SUNSET ROUTE"
Along the Mission Trail and through the Dixieland of Song and Story.

Two Daily Trains to New Orleans via Los Angeles, Tucson, El Paso, San Antonio and Houston. Connecting with Southern Pacific Steamers to New York, sailing Wednesday and Saturday.

"OGDEN ROUTE"
Across the Sierras and over the Great Salt Lake Cut-off.

Four Daily Trains to Chicago via Ogden and Omaha; or via Denver and Kansas City to St. Louis. Shortest and Quickest Way East.

"SHASTA ROUTE"
Skirting majestic Mount Shasta and crossing the Siskiyous.

Four Daily Trains to Portland, Tacoma and Seattle—through Oregon and the Pacific Northwest.

"EL PASO ROUTE"
The Golden State Route through the Southwest.

Two Daily Trains to Chicago and St. Louis via Los Angeles, Tucson, El Paso and Kansas City.

Oil Burning Engines----No Cinders, No Smudge, No Annoying Smoke

Awarded Grand Prize for Railway Track, Equipment, Motive Power and Safety-First Appliances, San Francisco Exposition, 1915

For Fares and Train Service, ask Southern Pacific Agent

Bureau of Mines Helds Oil Industry

By R. P. McLaughlin

The wonderful extent of the petroleum resources of the United States, with constant discoveries of new fields when old ones became less productive, for a time caused oil men and the public generally to believe that there was no danger of exhaustion. Rising prices of such commodities as gasoline have caused the general public to take notice of some features of the problems confronting the country. It is now more or less generally realized that our oil resources are limited and when the oil is once taken from the ground the supply is not naturally replentished. Following such a conclusion prudence dictates care in removing the oil from its natural reservoirs in order that none may be wasted, and furthermore the oil must be used most economically after it is removed from the ground. The first responsibility falls upon the oil producers and the second on the general consuming public.

The oil producers of California, which is the leading oil producing State of the Union, are fully aware of the problem facing them and are assisting in the enforcing of the State law which carefully regulates all their oil well operations. Such cooperation among those being regulated is, in view of the general American tendency to resent any governmental regulation, particularly noteworthy. The law is an absolutely original growth from natural causes, not modeled after any other similar attempts, and places the matter entirely in the hands of trained engineers. The State Mining Bureau is responsible for the major portion of the law and is charged with its administration and enforcement.

The principal waste in California fields has arisen from the fact that underground reservoirs of water are nearly always near or accompany those bearing oil, and if wells are not properly drilled and lined with casing the water enters the oil sands in such a manner as to displace the oil and make it impossible to pump it from the well. In earlier days the most successful oil producer was the one able to skim the first flush production from a field and move to a new one, leaving the property in any sort of condition that might be convenient. The lamentable results of some fifteen or twenty years of such work in a State having about six thousand oil wells may be more easily imagined than described.

Some beneficial results derived from the state law regulating the drilling of oil and gas wells are already shown in practical and concrete form. This is better than was to have been expected as the law has been in effect only about eleven months and the State Mining Bureau has not yet been able to complete even its preliminary administrative work. The hearty cooperation of operators with the Bureau engineers has been one of the chief causes of the early success.

Prevention of improper abandonment of wells is one of the most striking benefits already obtained. Owing to diverse geological conditions each well must be treated as a special case and the Bureau engineers now issue specifications of the work that must be followed at a well. In only a few cases has it been necessary to insist upon compliance with the specifications issued, because most operators are glad to have the expert advice. In some places, particularly in the Midway field, productiveness of certain wells has already been increased due to proper plugging of adjoining wells which were flooding the underground oil zones with water.

Another benefit accruing to operators is derived from the fact that the Mining Bureau now requires monthly reports showing the amounts of oil and water produced from each and every well. It might surprise the average person to learn that many oil operators have been spending money in pumping wells that were not profitable, but such is the case and the figures required by the Bureau have directed the attention of well owners to that condition and caused them to remedy affairs without action by State officers. Such a result was not anticipated by many persons who were in favor of regulation, and comes as a sort of by-product in the preliminary work of taking stock of actual conditions in the oil fields. Someoperators who prate about efficiency and actually demonstrate it in other lines of business, do not yet realize the necessity of such accounting but it is safe to predict that ordinary business prudence and bookkeeping methods will yet be applied to the oil industry before the oil is exhausted.

Another benefit to producers along similar lines is that following the request for logs of wells. When a well costs upwards of ten thousand dollars and its probable period of productiveness is from five to ten years, which are the actual conditions in California, the expenditure of money in drilling would seem to call for at least ordinary prudence and accounting. Many operators have realized a part of this truth and can tell to a cent the amount of money spent on each well but have no record to show how the money was spent and the condition of the well. When the employee, who spends the money, departs from the property he frequently carries all knowledge of underground conditions "under his hat" and the concern spending the money is forced, in case of repairs or further development, to spend more money to regain only a part of the information they could have saved by means of keeping a written drilling record each and every day that work progressed. Some operators have even come to the Mining Bureau for logs of their own wells and sometimes were supplied with at least a part of the information sought, due to the systematic efforts made by the bureau in collecting such information.

Frequent loss has been occasioned by the collapse of casing which was too light to sustain the pressure of earth and water at great depths and the Mining Bureau has commenced a study of this problem and already issued tables which have called the attention of some operators to the unnecessary losses sustained, with the result that more care is being shown in choosing material.

The law falls under the heading of that term which has been most, abused by its own friends, namely, conservation. It is being administered, however, with the central idea that true conservation must first benefit the operators who risk their money in an enterprise, because if they are merely penalized and hampered by regulations no public interest is apt to be served. Almost without exception the oil men are in favor of the work and have given ample demonstration of their

sincere desire to assist, so that a list of the law's supporters would merely be a catalogue of California oil companies with just enough minor exceptions to prove the rule. However, the Bureau yet has a great campaign of education ahead of it because many operators do not yet realize that the intricacies of keeping water and oil separated into their natural underground reservoirs is an engineering problem of considerable magnitude and can only be solved by the methods commonly recognized as essential in other industries. The problem of developing large oil fields is, in a broad way, almost identical with the problem presented in developing and maintaining railroads, electrical and irrigation systems, or large mines. In all these branches of industry final responsibility and authority are placed in the hands of skilled engineers. Probably small operators will seldom be able, to avail themselves of all necessary engineering assistance and will depend largely upon the engineers carrying on the state work, but the larger operators will be forced, by competition, to take adavntage of every possible aid that technical investigation can furnish and will therefore give over the details of development work entirely to their own engineering or geological forces which have, in the past, been given too little authority. Such a movement has already gained considerable force and a number of important operators now occupy the advanced position. It is easy to point out the great cost of the blunders following unsystematic procedure that the operators so carrying on their work will most certainly shortly adopt modern methods, and when the practice becomes universal the protective work of the State Mining Bureau will be greatly simplified.

EXPECT TO MAKE CHEAP GASOLINE

Permanent organization of the Gasoline Corporation, which was recently organized in New Jersey, with a capitalization of $10,000,000, has been perfected, and has acquired the three plants of the Consolidated Oil Refining Company. Charles J. Greenstreet, who is president of the new corporation, is the inventor of the Greenstreet process for manufacturing and refining gasoline, the process to be used by the new corporation. The testing plant has been built up to a commercial scale, and the three refineries will have a capacity of 10,000,000 gallons a year, and it is claimed that the company has orders ahead for 100,000,000 gallons. It is claimed that the process not only produces 50 to 100 per cent more gasoline from crude oil, but also produces from 65 to 85 per cent of gasoline from the refuse of other refineries. It is claimed that gasoline can be manufactured by this process at a profit when in excess of five cents a gallon.

The Standard Oil Bulletin says: September production averaging 265,514 barrels per day, marks an increase of 6057 barrels daily as compared with August. Shipments of 307,145 barrels daily again show an increase over the preceding month and establishes a new record. Crude stocks continue to decline, the depletion during September amounting to 1,248,823 barrels. Initial production from the sixty-two new wells completed totaled 8810 barrels daily.

In the summary of their monthly report we note that there are 95 new rigs; 268 wells drilling and 62 wells completed and 8 abandoned during the month.

There are 7,170 producing wells in California with a daily production of 265,514 barrels.

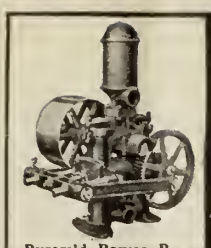
Total crude oil stocks on September 30, were 48,469,257 barrels. The total shipments from fields during September was 9,214,358 barrels.

A Communication *

We are pleased to advise that we are in receipt of reports from many drivers and users of GARFORD motor trucks, showing that Zerolene Oil has been used with particular success by them and that they are enthusiastic about continuing its use. They do not experience any of the ordinary engine troubles that could arise from an imperfect lubrication, and particularly in the case of old engines do they find your oil of absolute assistance.

In one instance a four ton GARFORD truck has been doing yeoman service in this city (Los Angeles) for four years hauling rock and gravel, and largely through consistent use of your Zerolene Oil, it has been able to make a perfect score, the motor having never as yet been taken down or in any manner overhauled.

* From Edward Curdley, Pres. Motor Truck Sales Co., Los Angeles, Cal. to the Standard Oil Company (California)


Pyramid Power Pump

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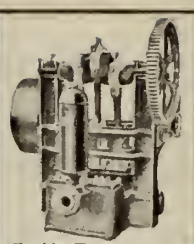
PUMP HOUSE
33 TO 41 FREMONT ST. SAN FRANCISCO, CAL.
PUMPS FOR EVERY SERVICE AND USE
FOR IRRIGATION—Power, Belt, Electricity, Air, Vacuum, Ship, Spray, Wine, Oil, Mines, Steam, Water Works, Wind Mills, Road Sprinkling, Rams, Hand, Deep and Shallow Well Pumps, Goulds Celebrated Triplex Pumps.
W. & L. PNEUMATIC WATER SUPPLY SYSTEM
Pipe, Pipe Fittings, Brass Goods, Tanks, Wind Mills.
GASOLINE ENGINES
Send for our large No. 36 Catalogue Mailed Free.
Inquire of your Local Dealer for full particulars.


Goulds Triplex Pump

Uuion Oil Makes Good Report

The Union Oil Company of California has submitted to its stockholders a summary of its operation for nine months to September 30, 1916, from which the following extracts are printed:

Profits earned from all operations less general expense, taxes, interest charges and employes' share of profits were approximately $7,150,000, an increase of $3,550,000 over the corresponding period of last year, while the net profit after making provisions for depreciation, was approximtely $5,320,000, an increase of $3,070,000 over the same period of 1915, and equivalent to 21 per cent per annum on the issued capital stock. Our principal subsidiaries, the Producers Transportation Co., Union Tool Co., and Southern California Iron & Steel Co., show marked increase in earnings.

Production of the company and controlled companies combined for the nine months approximates 4,955,000 net barrels, an increase over the same period last year of 1,120,000 barrels.

Sales for the nine months approximated $20,550,000, an increase of $6,600,000 over the same period of 1915. It is of interest to note that the sales to date this year exceed the aggregate for any previous fiscal year. Deliveries of fuel oil have been large, but we have been able to acquire substantial quantities of oil so that our storage now exceeds the quantity carried at the commencement of the year.

Capital expenditures for the nine months were approximately $1,830,000, consisting principally of the cost of new drilling and the installments on the purchase price of the steamships "La Brea" and "Los Angeles." Both these vessels are now in service and their operation continues fully up to expectations.

Current assets a tSeptember 30, 1916, approximate $15,000,000, and are over 7 to 1 of current liabilities. The excess of current assets over current liabilities at September 30, 1916, is approximately $12,900,000.

Current liabilities at September 30, 1916, approximate $2,100,000 of which $365,000 represents bills payable, or trade acceptances. All sinking fund installments both of owned and controlled companies, due and payable to this date, have been met. The sinking fund installments on the collateral trust notes and the Mission Transportation & Refining Co. bonds aggregating together $500,000, fall due on November 1 next. During the nine months there has been an increase in first mortgage bonds outstanding of $628,000, a reduction in bills payable of $835,000, and collateral trust notes, $260,000. Purchase money obligations at September 30, 1916, show an increase of $317,000 from the commencement of the year, consisting of long-term notes given on account of purchase of new steamships.

A dividend of $1.50 per share was declared on October 2, payable on October 24, to stockholders of record as of October 9. The stock transfer books of the company will be closed from Monday, the 9th day of October, 1916, to Tuesday, the 24th day of October, 1916, both days inclusive.

The Rmerican Oilfields Company has entered the Belridge-Lost Hills territory, and has shipped in a large amount of material for prospecting work.

Drilling of the new well of the Kern Trading and Oil Company opposite the once famous Lakeview gusher, has been completed and the well is now on the beam being cleaned out.

The ANGELUS HOTEL
Spring St. at Fourth LOS ANGELES
Exclusive but not expensive
Special Summer Rates
50 Rooms at $1.00 per day 50 Rooms at $2.00 per day
50 " " $1.50 " " 50 " " $2.50 " "
25 Rooms at $3.00 per day
Write for Weekly Rates
LOOK FOR OUR BIG WHITE FREE AUTO BUS.

California Concentrates

P. A. L. Englebrecht, of the Shell Company, has gone to Oklahoma for the purpose of superintending the erection of a refining plant for the corporation.

The Standard Oil Company will begin the drilling of three new wells on section 36, 12-24, near Maricopa, this month.

Kern county produced about $22,000,000 worth of petroleum in 1915.

The Crescent Petroleum Oil Company has its No. 1 well, on section 2, 25-19, down 1,500 feet. To further the work an assessment of 20 cents a share of the stock of the company has been levied.

The General Petroleum Company is installing four electric motors on section 6, 20-15 to pump wells, 34, 35, 36, and 37, all new wells.

The Highland Development Company has struck oil sand at 1,300 feet on the Dominguez estate, near San Pedro.

The Mascot Oil Company is redrilling No. 24 well on section 26, 32-23. No. 24 is down 800 feet.

The properties of the Fairfield Company on sections 13, 31-32 and 19, 31-23 will be known as the Doheny lease hereafter.

The Union Oil Company has made a strike in well No. 10 on the Hole lease, near Fullerton. Indications point to its being a big gusher.

The Great Salt Lake Oil Company has incorporated at Phoenix, Arizona for $2,500,000, with J. J. Lipsohn, C. Jacobs, H. M. Harrison and R. Stearns as incorporators.

W. C. Heffern has leased a number of properties near Fullerton.

The Tunnel Petroleum Company, of Los Angeles, has been permitted by the Commissioner of Corporations to sell 100,000 shares at par, 50 cents a share, net to the company.

George S. Gillespie has leased 270 acres of El Pismo Rancho near San Louis Obispo.

The Mexican Pacific Coast Oil Company has incorporated at Phoenix, Ariz., with a capital of $2,000,000. Dr. J. M. Burke, W. H. Ripp, Frank Lott, August Weber, William Becraft, Edward Ludgar and Feming Maestenro are the incorporators.

The Rio Grande Oil and Mineral Company has incorporated at Santa Fe New Mexico for $50,000.

Natural Gas Petroleum Oil Company has incorporated at Reno, Nev., for $100,000, with Benjamin S. Dudley, Clarence A. Brown, Edmund R. Dudley, Robert C. Dixon and Frank Thomas, all of Oakland, Cal., as incorporators.

The Wyoming Empire Oil Company has incorporated at Phoenix, Ariz., for $10,000. J. W. Whitley, J. R. Whitmire and F. T. Martens are the incorporators.

The following oil companies have filed articles of incorporation with the secretary of state of California.

Sunbeam Oil company, Los Angeles—Incorporated July 17, 1916; capital, $100,000; par $100. Incorporators: R. B. Blodgett, Isaac Milbank, Nicholas Milbank, Luther H. Green and Steuart O'Melveny, all of Los Angeles.

Calient, Oil and Land Company, Los Angeles—Incorporated July 17, 1916; capital, $50,000; par $1; incorporators; L. V. Wilson, H. C. Farnum and Emil Raymond, all of Los Angeles.

East Puente Annex Oil Company, San Diego—Incorporated July 17, 1916; capital, $100,000; par $1. Incorporators; George A. Harrison, Frederic W. Stearns and L. A. Blochman, of San Diego; A. J. Ellis, J. M. Roberts and Rufus Jackson, Los Angeles, and E. A. Fano, Ocean Park, Cal.

Josephine Oil Company, Los Angeles—Incorporated July 24, 1916; capital, $35,000, par $1. Directors: J. M. Kent, C. F. Whittier, Joe Degen, J. S. Wallace, all of Los Angeles, and E. A. Fano, Bakersfield.

Bartola Oil Company, Los Angeles—Incorporated August 7, 1916; capital, $100,000; par, $100. Directors: H. M. Marple, Fullerton; H. K. Bagley, Louis P. Tappiener, G. C. O'Connell and E. Harris, all of Los Angeles.

Warren Oil Company, Los Angeles—Incorporated August 14, 1916; capital, $5,000; par, $100. Directors, R. G. Parker, Charles H. Weigand and Julian W. Schwab, all of Los Angeles.

The Jackson Oil Company anounces that it will add six wells to its list of good producers, in section 11, 30-22.

The Midlands Oilfields Company, a subsidiary of the American Oilfields Company intends to drill several wells in the McKittrick district in the near future.

The Pecos River Oil and Gas Company, has incorporated at Santa Fe, for $100,000.

The North American Company now has its No. 58 well on section 26, 32-23, Maricopa district, in the oil sand at a depth of 1,043 feet, and expects to bring it in, in a few days.

Two new oil companies are preparing to enter the Ventura field. Articles of incorporation have been filed with the county clerk of that county by the Lion Oil Company and the Western American Oil Company.

The West Penn Oil Company has purchased fifty acres on the McKittrick front, of the Mahaska Oil Company. A new well is to be drilled.

Trustees of the defunct Cousins Oil Company have transferred the company's property on section 6, 30-22, Lost Hills district, to the Midland Oilfields Company.

The New Era Oil Company has incorporated at San Diego, Cal., with a capitalization of $100,000. The incorporators are Earl S. Barr, John H. Vaughn, Wesley C. Heffern, Harry R. Braden, Warren W. Seers, G. Murl Gordon and J. F. McVean.

The Economy Drilling and Oil Company has incorporated at San Diego, Cal., capitalized at $25,000. Warren W. Sears, G. Murl Gordon and J. F. McVean are the incorporators.

The Muscatine Oil Company, at Maricopa, has started an active campaign to increase the production of the lease.

Another new derrick is being erected by the Standard Oil Company on the northwest quarter of the M. J. & M. & M. property on section 36, 12-24, Maricopa district.

Mining Congress Important to Oil Men

The 19th Annual Session of the American Mining Congress which will be held at Hotel LaSalle, Chicago, during the week of November 13th, will eclipse in attendance and in interest all previous meetings, and represents a climax of the great work of co-operative purpose and endeavor of nearly two decades.

And that it will be an unparallelled success is due in a great measure to the unstinted efforts, bath as to time and means, of the Chicago committee.

The entire seventeenth floor of Hotel LaSalle has been set apart for exhibits, and enough space has already been taken to assure a thoroughly representative display of all the interests associated with the Mining Congress.

The General Electric Company promises an unusual display the best it has ever made. Among others who have contracted for space on the floor are the following: The Link Belt Company, The Goodman Manufacturing Company, Stromberg-Carlson Company, John A. Roebling & Sons, Justrite Manufacturing Company, G. L. Simonds Co., Tool, Steel Gear & Pinion Company of Cincinnati.

The entire 19th floor of the hotel has been set apart for meeting rooms. In addition to this there will be several meeting rooms on the 18th floor and two on the 17th.

On Monday night Mr. Edward L. Doheny, of Los Angeles, will show the moving picture of the great Mexican oil gusher, Cerro Azul, and Dr. Henry Mace Payne will have an illustrated lecture on "Mining Frozen Gravels of Alaska and Siberia." The slides will portray features of mining in the far North which have never before been shown.

Mr. H. L. Ameling of St. Louis,, will deliver a lecture illustrated by moving pictures on the use of the core drill. This will be delivered at one of the general meetings or at an evening session. It will show the drill at work, give wonderful pictures of the cores, explain in detail how underground areas are exploited for mining prospects, and will be a pictorial representation of the revolution that this drill has worked in the labors of the investigating mining engineer.

On Tuesday evening there will be the general meeting for the election of officers and for the presentation of the regular reports.

On Wednesday night there is to be a smoker, and on Thursday evening the annual banquet will be held in the magnificent banquet hall of the hotel.

The program for the general meetings in the mornings and for the "section meetings" in the afternoons are nearly completed, with a sufficient number of acceptances to bear out the prediction that it will be a "whale of a convention." Nothing quite so far reaching and so extensive in its scope has been attempted at previous conventions, and no coal mining, metal mining or oil man can acord to miss it.

It means that those who come will get into touch with the live wires in their own branch of the mining or oil business, and with new and carefully tried-out economies and means of greater productiveness.

The addresses of welcome from Governor Edward F. Dunne of Illinois, Mayor W. H. Thompson of Chicago, and President J. W. O'Leary of the Chicago Association of Commerce, will be responded to by representatives of every oil and mining state in the Union. These responses will, however, not be the ordinary impromptu kind but in every instance a carefully prepared three-minute resolution embracing the state's most important mining issue. With such a consensus of opinion before it, the Resolutions Committee will be able to frame legislative demands which will synthesize the needs of the mining sections of the country.

At the general meetingTuesday, November 14th the subject will be "Safety". Mr. Van H. Manning, director of the U. S. Bureau of Mines, will have an address on "The Past and Future of Mine Safety Work." Mr. J. F. Welborn, president of the Colorado Fuel & Iron Co., has promised to be present and will take part in the discussion. Others of great prominence will participate.

At the general meeting Wednesday the topics will be "Efficiency in Mining Operation." This promises to be an exceptionally interesting and instructive program. Colonel George Pope of Hartford, Conn., president of the National Manufacturers' Organized Capital and Organized Labor and Their Relation to Efficiency, Conservation, Better Wages, Better Living Conditions, Lawlessness, Strike Disorders, and Industrial Freedom."

Secretary of Labor, W. H. Wilson will be present to reply to Col. Pope if it can possibly be arranged. It is also our purpose to urge Mr. Henry Ford of Detroit to be present and speak on the subject.

At this meeting Hon. E. N. Hurley, chairman of the Federal Trade Commission, will speak on the subject of "The Federal Trade Commission and the Mining Industry." It was this commission which through Mr. Hurley, established a uniform system of cost accounting for the coal industry, and he will present for consideration his ideas of needed legislation as developed in the course of the commission's investigation.

Mr. Charles M. Moderwell, of Chicago, will present the report of the Committee on Relations with the Federal Trade Commission.

On Thursday the subject will be "Conservation," and among those who are to have papers is Senator Phelan of California, Mr. Hennen Jennings of Washington, D. C., will have an epoch-making address on "The Accomplishment of Invention and its Relation to Labor and Capital." Among the other topics of the day by experts will be: "Waste in the Mining Industry—in Mining, in Distribution, and in Use," the "Relation of Waste —to the Operator, the Consumer, the Public."

And for Friday the local reception committee will probably arrange an excursion to Gary where inspection will be made under the guidance of the Steel Company's experts.

The sections promise to be of unusual interest.

The zinc and lead section opens in its own meeting room at 2:20 P. M. Tuesday, under the chairmanship of S. D. Nicholson of Denver. The principal address of this day will be by Otto Ruhl of Joplin, Mo., on the subject "A Tariff for Revenue as Related to a Compensating Duty on Lead and Zinc Ores." This discussion will be participated in by the leading men in this section.

On Wednesday in the zinc and lead section the report of the committee on Mineral Statistics will be made. The topic for the day will be "Co-operation in the Zinc Industry." Addresses will be delivered on "The Marketing of Zinc Ores," by W. B. Shackleford, "The Importance of Zinc in Preparedness," by J. H. Troutman of Denver, and "Smelter Contracts and Market

Questions", by R. M. Henderson, of Breckonridge, Colo.

On Thursday the Zinc and Lead section will hear the following addresses: "Lead and Zinc Resources of the United States, by C. E. Siebenthal, of the U. S. Geological Survey, "The New Things in Science," by F. G. Gottrell, of the U. S. Bureau of Mines. In addition to these there will be papers on "Conservation in the Zinc and Lead Industry of Present Day Importance," and a talk on "Flotation Processes", by Edward H. Nutter, of San Francisco.

An interesting discussion will be led by Mr. H. O. George, manager of the Wisconsin Zinc Company, on the "Need of a Satisfactory Tariff on Ores."

The Precious Metals section will begin its discussions in its own assembly rooms at Hotel La Salle, Tuesday, November 14th, at 2:00 P. M., Irving T. Snyder of Cripple Creek, Colo. presiding. On the opening day of this important session Senator John F. Shaforth, of Colorado, is to talk on "The Future of Silver," Dr. Waldemar Lindgren of Boston is to speak on "The World's Gold Supply and its Sufficiency for Business Needs".

On Wednesday in the Precious Metals section the addresses and discussions will be on these topics: "The Best Industry of the Rocky Mountain West," by T. B. Stearns, president of the Denver Civic Ass'n, "How to Protect the Small Investors in Metalliferous Mines." by W. R. Allen of Butte, Mont., "Does the Smelting Business Partake of the Nature of a Public Utility," and "Should Independent Ore Producers Co-operate in Providing Treatment and Marketing Facilities."

On Thursday, with D. W. Brunton of Denver presiding, the committee on Revision of Mineral Land Laws is to report through its chairman, E. B. Kirby. At this meeting there will be an address on the "Foster Bill" by Congressman M. D. Foster of Illinois. chairman of the House Committee on Mines and Mining. Horace V. Winchell of Minneapolis is also to speak on this topic. The discussion promises to be warm and interesting.

The Oil Section in its own assembly rooms at Hotel La Salle opens for business at 2:00 P. M. Tuesday, Ralph Arnold of New York City presiding. Three addresses which will all be open for discussion are as follows: "The Oil Resources of the United States", by W. A. Williams of the U. S. Bureau of Mines. "The Authority of States to Tax Production from Indian Lands", by Judge J. C. Gamble, of Des Moines, Ia., and "The Public Interest in Gas and Oil."

On Wednesday in the Oil Section, Mr. E. L. Doheny of Los Angeles presiding, the opening address will be by Ralph Arnold of New York on the subject "The World's Oil Supply." Dr. Rittman is to speak on "Chemistry in its Relation to the Oil Industry," and Mr. J. C. McDowell of Pittsburg will have an address on "Geology in its Relation to the Oil Business."

On Thursday with S. Y. Ramage of Oil City, Pa., presiding, the addresses are to be on "The California Plan of Marketing Oils," by George Labe of Los Angeles, and "A Federal Petroleum Bureau", by H. G. James of Kansas City, Secretary of the Independent Oil Refiners Ass'n.

The Coal Section opens in its own assembly rooms at Hotel La Salle, Tuesday, November 14th, at 2:00 P. M., Mr. Chas M. Moderwell of Chicago presiding. Mr. S. A. Taylor will present a report of the Committee on "Uniform Accounting Cost System," and Dr. F. C. Honnold of Chicago will lead the discussion. Mr. S. M. Robbins, president of the Pittsburg Vein Coal

PROFESSIONAL DIRECTORY

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Operatives, Mr. Hugh Skirkie, of Terre Haute, and Mr. T. L. Lewis of West Virginia, are all to have something to say on this subject. Promptly at 3:30 P. M. the report of the committee on "Workmen's Compensation" will be presented by Mr. T. L. Lewis, and this will be followed by an address on "The Distribution of Coal in Cities."

On Wednesday with Dr. I. C. White of Morgantown, West Va., presiding, there will be an address on "The Colorado Industrial Commission," by Wayne Williams of Denver. An effort is now being made to induce Mr. John D. Rockerfeller, Jr. to be present and to address the convention on "The Rockerfeller Plan", or on a kindred topic. Dr. S. D. Warriner of Philadelphia is to have an address on this day on "The Closed Shop and the Check-off as Related to Efficiency in Mining Operations."

On Thursday in the Coal Section, with J. C. Kolsen of Terre Haute, presiding, the principal address is to be on "Co-operation—the Great Necessity in Bettering Coal Mining Conditions, and the Means of its accomplishment," by President Carl Scholz of the Congress. A discussion of "Ways and Means" is to follow this address.

Mr. James F. Callbreath, Secretary of the Congress is now on a trip to Colorado and Utah, where big meetings are to be held and interest aroused in this epoch-making 19th Annual Convention of the American Mining Congress.

Among those whose addresses will be notable either in the sections or in the general meetings, are the following: Titles have not yet been received, but definite assurances of attendance and participation are at hand. These are in addition to the names already mentioned in connection with the meeting.

Judge George H. Patrick, of Washington, D. C., Dr. A. H. Perdue, State Geologist, Nashville, Tenn, Dr. David T. Day, Geologist, Washington, D. C. W. R. Allen, of Montana, Mine Operator and former Lieutenant Governor, Walter Harvey Weed, of New York, Theodore F. Van Wageman of Denver, W. A. Lyon, of Salt Lake City, Oil Flotation Expert of the Bureau of Mines, C. A. Tupper, of Illinois, Editorial writer of the Mining World, R. B. Moore, of Denver, rare metal expert, Bureau of Mines, Fred Laist, of Montana, Chemical Expert, Anaconda Copper Co., Otto Kahn, of Kuhn, Loeb & Co., who will probably deliver a special address on the "Conservation of Capital."

The Convention Headquarters of the American Mining Congress are in rooms 213 and 214, Hotel La Salle, Chicago.

Kindly send all inquiries to the Secretary, Mr. J. F. Callbreath, at that address.

GOOD GASOLINE EASILY OBTAINABLE

stated, in a recent newspaper article, this his new motor was especially designed to handle low-grade gasoline, or "poor gasoline" as he put it. "High-test gasoline" he said, "is not easily obtainable in the most favored localities."

Commenting on this article, J. H. McDermo district sales manager of the Standard Oil Company said recently: "Evidently the Pacific Coast was overlooked by this manufacturer in making up his list of 'most favored localities'. Otherwise his statement regarding the scarcity of good gasoline wouldn't hold good. For Pacific Coast motorists, at least, should have no difficulty what-so-ever in obtaining pure, high-test distilled gasoline. Our company has been for years, and now is, putting out only this real, good, old-fashioned, all-refinery, unmixed, gas, and our distributing machinery has put this gasoline into practically every town and hamlet on the Pacific Coast. There's no need for the Pacific Coast motorist to go without good gasoline."

LAKEVIEW AGAIN FLOWING

After having produced more than 9,000,000 barrels of oil, and having produced as much as 70,000 barrels in one day, the once famous Lakeview gusher well has been cleaned out by the Union Oil Company and has been placed on the beam and is producing 30 barrels a day.

VENTURA SHIPMENTS START SOON

Arrangements are being made to start the first shipment of oil from the Ventura City field. A pump has been put on the old wrecked well No. 2 of the State Consolidated, where the derrick recently toppled over when the ground at the mouth of the well sunk ten feet. The well will run 200 barrels a day.

SPECIFIC GRAVITY NO TEST

Gasoline users have been warned by Van H. Manning, director of the Bureau of Mines at Washington, that specific gravity is not a satisfactory basis for the purchase of gasoline and that tests with machines made within the past two years had shown less than 2 per cent difference in power between 74 and 60 gravity gasoline.

K. T. & O. INCREASES PRODUCTION

The Kern Trading and Oil Company in its effort to increase production is cleaning out its old wells in the Taft district. The company has a crew of men cleaning out No. 2 well, on section 27, 31-23, which flowed 20,000 barrels when it came in and then took fire. The fire caused a crater about the mouth of the well and the effort now being made is to clean out the pipes in the crater and put the well back on a producing basis.

OIL FIELD HEADQUARTERS NEAR TAFT

Arrangements have been completed by the State Mining Bureau with the Standard Oil Company which will soon complete the plan of the Bureau to have a field headquarters built expressly for the care of the many logs and data relative to the wells. The Standard Company is arranging to turn over to the state a tract of land 200 feet square, just across from the Standard's main camp on section 11, on the Sunset Railroad Company, and on this a suitable building will be erected by the Bureau.

A new well is being drilled on the Tapo, in the east end of Ventura county, the intention being to try a new location for oil The Tapo field is now producing 5,000 barrels a month.

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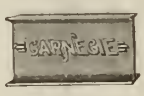
The mark of quality  It protects the user

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Vol. X SAN FRANCISCO, NOVEMBER, 1916 No. 3

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Vol. X SAN FRANCISCO, NOVEMBER, 1916 No. 3

Possibilities of Wyoming Field

The Cheyenne, Wyo., *Leader* has published a most interesting resume of conditions of the petroleum industry in that state, in which it has the following to say:

"While the commercial development of Wyoming's oil resources, one might say, has all taken place during the last five years, the discovery of oil and prospecting for bodies of the same began a long, long time before.

"The Indians had long used crude petroleum for medicinal and commercial purposes, but the earliest printed record we find of the knowledge of oil among white men is in Washington Irving's "Captain Bonneville." Captain Bonneville visited the Wind River valley in 1883 and, having heard of petroleum springs from Indians and trappers, he hunted until he found the "tar spring," which marked the present location of the Dallas oil field.

"In Stansbury's expedition to Great Salt Lake, written in 1849, we find regarding the petroleum spring at Hilliard, Uinta county, '—a spring of petroleum, or mineral tar, oozes from the low bank of a little rivulet flowing into the valley of Sulphur creek. The emmigrants collect it for medicinal purposes and for greasing their wagon wheels.' The Carter spring, six miles to the west, was discovered about the same time.

"In 1863 oil was being collected from the spring near Poison Spider creek and sold for wagon grease to the emmigrants traveling the Moran trail. In the winter of 1883 the cattlemen in the Big Horn Basin ran short of lamp oil and used the crude oil gathered from a spring near Bonanza creek. Before a railroad was built into the Black Hills, crude oil was delivered to the gold mills for lubrication purposes from springs near Moorcroft. This oil brought $28 per bbl.

"The first production marketed from drilled wells was from the Carter wells, Uinta county. The first gusher wells were drilled in the Dallas field in 1883, and the first wells at Shannon on the north end of the Salt Creek field in 1889. Oil from the Shannon wells was hauled to Casper by sixteen-mule team, 18,000 pounds per trip, and sold to the little 50-bbl. still refinery, which was built in 1895, at $7 per bbl. Salt Creek field proper was not drilled until 1908.

"It is an interesting fact that the first well on Salt Creek dome was advised and located by an Italian petroleum geologist beside the road that the general public, oil men, prospectors and even geologists had been traveling for more than twenty years. In fact, for some thirteen years, oil from the now unimportant Shannon field had been hauled across what is the largest and most productive oil field known to date in the Rocky Mountain district. It must, of course, be remembered that the science of petroleum geology, as it is known today, was in its infancy, and the few American geologists who had visited the field, did not recognize its possibilities.

"From the very beginning of oil development in the State, the business has been inflicted with the fraud and faker. Before there was any development, certain of the lands had been sold, or mortgaged, to half a dozen different concerns by the same man at the same time. The European capitalist seemed to accept the claim notice with a county clerk's filing certificate upon it as equivalent to a deed, and hundreds of thousands of dollars were stolen from English, Belgian and French investors.

"Unfortunately trickery did not expire when the business reached a solid basis. All sorts of schemes are even today being used to separate the unwary from his dollars. Immediately upon the discovery of a new field, a certain class of "get-rich-quick promoters" rushes in and acquires leases or claims in the vicinity of the pool and begins selling stock on the statement that, " our land is only two miles from the producing well of the Sun, Moon and Stars Co. The stock of our company is sure to advance 20 per cent next week, and 50 per cent next month." And the surprising thing is that there are suckers enough born each year to keep these sharks living without working.

"The very fact that such rich reward comes to the legitimate developers of oil fields makes it easy for the faker to secure the attention and finally the money of the small investor, who cannot afford the time and expense of an investigation. During the past five years, many men have attained competence, or even larger wealth, through oil development. The story of the ways in which oil wealth has come to some men in the State sounds like the fairy tales. Yet, almost always, if one digs deep enough, one reaches a foundation of good judgment resting on solid geologic evidence, rather than the "taking of a flier" by some banker with a gambling disposition.

"Oil is not the only hydrocarbon found in the State. Wyoming could today supply all the natural gas used by Pittsburgh and New York City. But we have no market for it and must await for new uses and new industries to develop before it becomes a wealth producer. While the striking of gas instead of oil is always a disappointment to the driller, it may be that, when the totals of columns

of human benefits are finally struck off, the sum at the foot of the gas column will be greater than that at the foot of the oil column.

"One can but view with admiration the advance made in the petroleum industry in this State during the past five years. And this in the face of constant opposition, and so far as possible, prevention by the United States Government. One frequently hears the query, "What is the Government's reason for trying to prevent the growth of the petroleum industry in the western states?" Several unsatisfactory and often silly answers are given out by the so-called "conservation" clique in the saddle of the Department of the Interior. The true reason may possibly be that the Government employes are but human beings and in some manner or other it becomes to their advantage to prevent, if possible, the competition of western oil with eastern oil. Certain it is that eastern oil would now be selling at a much higher figure if all western production had been eliminated. We now know that the National Forester movement was conceived and backed by the owners of timber land in Minnesota and Oregon, who wished to eliminate competition from the forests of the public land States. It is possible that certain interests do not want to sell their eastern oils in competition with western oil, and the so-called "conservation" movement is made to be the cat's paw."

Union Oil Stockholders Warned

The Union Oil Stockholders Protective Committee, of which John Garrigues is the guiding star, is out with a letter to stockholders of the company, which is of sufficient interest to bear publication and is here presented in full:

"The adjourned annual stockholders' meeting of the Union Oil Company, set for October 19th, has been again adjourned for lack of a quorum, to February 27, 1917. This Committee was represented at the meeting by its Chairman and Secretary, with sufficient proxies to elect a number of independent Directors. The adjournment was forced through, according to the Stewart program and over the protest of this Committee, who endeavored to have it held in December, when it would unquestionably be possible to secure a quorum and elect a new and more representative and responsible directorate.

"A meeting of the Board of Directors was held on October 23rd, when the request was made that the Board should elect a Director named by your Committee to fill the vacancy existing since the death of Mr. Giles Kellogg. This the stockholders were entitled to, but the request was evaded and declined.

"For your further information, this Committee advises you that a movement is now on foot to dispose of some $12,000,000 of the unissued treasury stock of the Company, *ostensibly* for cash, at par, to E. L. Doheny and "associates." The pending sale is being engineered by a Board of Directors dominated by the Stewart interests through means declared unlawful by the Court. This Board, as a result of the long adjournment, will hold office for another four months. They have already appointed a Committee to confer with the Doheny syndicate, and Mr. W. L. Stewart has recently been in New York on this errand.

"What does this mean? If the scheme goes through, there can be no doubt but that the fairest representations will be made to the Stockholders; the necessity for the money; the uses to which it will be put and glowing statements of the benefits to accrue to present stockholders. Over and over again in the past plans have been concocted by inside and outside schemers—always in secrecy and silence—and when all was completed and ready, the stockholders have been told anything and everything that the exigency required, later to learn of wildcat ventures, wasted funds and lost opportunities—all at the expense and to the damage of the Company and its stockholders.

"Such was the formation of the United States Petroleum Company in 1899; such that of the Union Provident Company in 1905; such the attempted formation of a "voting trust" in the summer of 1916. Such was the desperate attempt to defend the suit brought by this Committee on behalf of the Stockholders. All these plots and schemes were ostensibly for the benefit of the Company and its stockholders; all were carried out at the expense, direct or indirect, of the Company and its stockholders.

"All these mentioned actions and devices, and many others, have cost the stockholders directly millions of dollars; indirectly no man can estimate the damage. Every one of them has been made possible by and has grown out of an unjust, irresponsible and illegal control of your Company by the Stewarts. They are still in the saddle. They have not changed their policy or methods.

"The real motives and purposes behind the present scheme to dispose of the treasury stock of the Company are, in our, opinion, all too clear and apparent:

1. To secure a continuation of the Stewart control which has been broken by the dissolution of the Union Provident Company and the curtailment by the Court of the power of the United Petroleum Company.

2. To embark the Company in a new career of unhealthy expansion and extravagance.

3. To use the funds thus acquired in the purchase or absorption of stocks or properties or unsound, unprofitable and grossly over-capitalized oil companies.

4. To siphon from the present stockholders of the Union Oil Company a huge share of the millions of dollars of surplus, reserves, and other uncapitalized values which belong to them.

"We beg to advise the stockholders that, according to the best and most reliable official information, the net available earnings of the Company for the present fiscal year will be in excess of 25 per cent on the full outstanding capital stock of the Company. The present value of their stock as carried on the books of the Company is approximately $175 per share, and an appraisal of the Company's oil land holdings by the foremost geologist and oil expert in California establishes a minimum value on the Company's oil properties alone, of more than $300 a share. On the basis of earning and physical values of its properties *Union Oil stock should be selling on the market in excess of* $200 *per share,* but there is an apparent manipulation being exercised to keep the price about par in the hope of establishing a price for the unissued treasury stock.

"The Union Oil Company is on an absolutely sound footing financially and commercially. Its credit is high, its business large and profitable. It has abundant funds in hand and its earnings are amply sufficient to provide for new refineries; increased drilling operations; all other necessary capital investments: the payment of all debts as they mature; the payment of steady and increasing dividends and the addition of ample reserve—all

without the necessity of borrowing one dollar, or selling one share of treasury stock.

"Fight this new scheme and fight it promptly. Fight it with protests. Fight it with publicity so that an honest, responsible and competent management can be installed and your Company kept out of the hands of designing schemers.

"It will be necessary for new proxies to be executed by all stockholders desiring to be represented at the annual meeting February 27, 1917, and this Committee will, therefore, in due course send you new proxies for your signatures."

MEXICAN PETROLEUM SITUATION

A correspondent of the *Derrick* writing from Tampico, Mexico, says:

Declaring that it is incumbent on the national government to avert in every way possible the danger of fire to deposits of petroleum, wells, habitations, shops and other installations, Pastor Rouaix, secretary of the Department of Fomento, has promulgated a decree at the instance of the first chief of the constitutional army incharged with the executive power of the nation, in which rules and regulations covering the storage of oil, in sumps and steel storage, are set forth at considerable length. Following the exordium, the decree declares in part:

"The storage of crude petroleum in dams (sumps), or in general, in open deposits of concrete or of any other material, will only be permitted temporarily.

"The companies or private parties who may have constructed dams or open deposits of concrete or any other material to receive the first gushing of the wells they are drilling, and those that in future may be constructed with like object, can only be utilized during the period of one year, within which time they must substitute them with tanks made of steel or some other material containing the conditions expressed in this circular."

Continuing the decree fixes the distances open deposits of petroleum must be placed from the nearest dividing boundaries, the measurements being from the center lines of the walls of the sumps, i. e., 20 meters from the nearest dividing boundary; from dwelling houses, shops boilers, the center lines or the nearest railroad, from the nearest wells, from other uncovered deposits, 40 meters; from the center lines of highways and roads, 30 meters. It is also provided that the uncovered deposits must be surrounded by fences installed as per regulations.

Considerable space is then devoted to firewalls for steel tanks, etc., roofs for same, etc., and it is further provided that: "All tanks will be equipped with apparatus for the extinguishment of fires, such as pipes for steam or those that generate foam." It is further provided that tanks must be a certain distance from other tanks, and installations similar to the conditions governing open sumps, except the distance raised from 40 meters to 60 meters where tanks are concerned; and further, tanks must be 100 meters apart, and 50 meters from the boundaries of the vicinity, and from roads. The following provisions concerning the construction of tanks are included: "Roofs will be of steel slightly conical or spherical, or even a plane, this last form being recommended; in which case it must be covered with water 20 centimetres deep at least, and this water must be maintained cool by circulation.

"There will be placed between the cementation and the tank a floor of boards perfectly tarred, in order to avoid in what is possible the danger of oxidization of the bottom of the tank."

It is further provided that tanks must be grounded properly for the conduct of electricity; must be painted pearl gray or white to lessen evaporation, must be fenced in, and must be guarded, especially at night."

Article 13 of the decree is as follows: "The space of two years is fixed, calculated from the date (i. e. September 26, 1916), within which the dams and the open deposits of petroleum in general, existing at present, may be substituted for tanks of steel or some other proper material, in such manner as to reduce to the minimum the losses and dangers inherent on the storage of petroleum in great masses. Also, the period of one year is conceded, counted from the date of the present circular, in which the present tanks may be painted, in conformity with the provisions contained * * in this circular."

Disobedience to the provisions in the decree is punishable by a fine not to exceed 500 pesos, national gold, or temporary, or definite suspension of the operations of the party at fault.

The decree was signed in Mexico City, September 26, the present year, by Senor Rouaix, Secretary of Fomento.

Shipments of crude oil, prepared fuel and topping plant runs from Tampico and Tuxpam during the month of September aggregated 2,243,807 bbls., a decrease when compared with the month of August of 548,072 bbls. The United States took the bulk of the movement, both Mexican coastwise and South American shipments registering a decline when compared with the month preceding. Shipping from Tampico: Huasteca Petroleum Co., 451,259; Standard Oil Company, 219,471; The Tampico Co., 148,879; Freeport & Mexican Fuel Oil Corporation, 125,935; East Coast Oil Co., 88,432; Mexican Eagle Oil Co., Ltd., 78,000; Mexican Gulf Oil Co., 62,850; Pierce Oil Corporation, 52,000; La Corona Petroleum Co., 24,000. From Tuxpam: Mexican Eagle Oil Co., Ltd., 610,768; Penn Mex Fuel Co., 382,213.

Generally speaking, the fields were featureless the past week. Drilling operations in Panuco are epitomized as follows: R. E. Brooks' Interests' No. 1 Gonzales, drilling in alternating streaks of lime and shale at 1,020 feet. Panuco-Boston Oil Co.'s No. 9 Ugarte is waiting for cement to set around 8-inch cemented at 1,625 feet. Cia. de Petroleo La Oxaquena's No. 1 Magaubes is fishing for an underreamer lug at 1,570 feet. Cia. de Petroleo Panuco-Maguabe's No. 1 Vinas is drilling in limestone at 1,085 feet, with very little gas. Cia Petrolera Hispana-Cubana's No. 1 Alamo is drilling at 1,240 feet in grey shale, with a showing of oil from the 1,175,-foot stratum. Cia. Mexicana Petrolera Seguranza's No. 1 Buena Vista is drilling in shale and lime shells at 1,750 feet. Cia. Nacional de Petroleo Naco has suspended operations at 900 feet. Cia Petrolera Oro Mexicano's No. 1 Santana Riviera is a derrick.

Mexican Mascot Oil Co.'s No. 1, lot 11, Tepetate, is up against a case of frozen casing, and have shut down for orders. The drill in this test (which had a good showing at 1,770 feet) was sent to 1,970 feet, with 43,-pound 8-inch following, when the casing stuck at about 1,940. The crown block on the derrick has been pulled in trying to lift the pipe. The formation in which the drill stopped is a soft shale. Husateca Petroleum Co. is resuming drilling on its No. 1 Chinampa, which was shut down last June at 1,600 feet. Mexican Eagle Oil Co., Ltd., has one string of tools running, making hole at No. 23 Tanhuijo. Zaleta Marr Oil Co.'s new test on the Zaleta Marr will probably be making hole by the time this appears in print.

In the Topila pool the effect of the recent flood con-

tinues to delay operations. Cia. Mexicana Petrolera Seguranza's No. 1, lot 48, Lagartero, is drilling at 500 feet and carrying 12½-inch. Cia. Petrolera Los Cantabros' No. 1, P. Arteago, has about cleaned up boilers, machinery and camp, and will commence making hole this week. Cia. Abastacedora de Aceites y Petroleo's No. 1 Ramirez is drilling at 2,450 feet in a brown shale and reports a showing of oil.

In the Soto La Marina country, La Corona Petroleum Co. has resumed operations on its No. 3 San Jose de la Rulsias, the drill being 2,310 feet.

At Gusima y San Lorenzo, Cia. Petrolera La Tampiqueno's No. 1, lot 7, is drilling in a soft shale at 2,704 feet.

At San Mateo, Cia. Inglesa Explotadora de Petroleo's No. 1, lot 10, is drilling at 1,910 feet in a gray shale and some lime shells.

The following table summarizes the shipments of petroleum and products for September:

From Tampico	1,250,826
From Tuxpam	992,981
Total September	2,243,807
Total August	2,791,829
Decrease	548,022
DIVISION OF MOVEMENT	
To the United States	1,769,365
To Mexico (coastwise)	313,747
To South America	160,695
Total (to balance)	2,243,807

ARTIFICIAL GAS IN 1915

The use of artificial gas as a domestic and industrial fuel is increasing. In households gas is replacing coal for cooking, and to some extent for heating, and in the industries gas—mainly that from by-product coke ovens—is now used for raising steam and firing open-hearth steel furnaces. The advantages of gas as a fuel, not the least of which are its cleanliness and its ease of control, are well known, and it is being supplied to many small cities and towns by pipe lines from larger cities where it is made. The use of artificial gas for illuminating, however, is decreasing, mainly because of competition by electricity.

The artificial gas—oil and water gas and coal gas from retorts and by-product coke ovens—marketed and sold in 1915 amounted to 266,204,248,000 cubic feet, valued at $173,882,132, according to statistics collected by C. E. Lesher, of the United States Geological Survey, Department of the Interior. These figures show an increase of 25 per cent in quantity and 17 per cent in value compared with 1912, the next preceding year for which the statistics of this industry were collected by the Geological Survey.

The quantity of gas from coal-gas plants in 1915 was 43,747,432,000 cubic feet, valued at $40,257,108, an increase of 24 per cent in quantity and 25 per cent in value compared with 1912. The quantity of surplus gas sold or used from by-product coke ovens in 1915 was 84,355,914,000 cubic feet, valued at $8,624,899, an increase of 55 per cent in quantity and 84 per cent in value. The average value of the coal gas in 1915 was 92 cents per 1,000 cubic feet, and that of gas from by-product coke ovens was 10 cents, the difference being due to the fact that the value given for coal gas includes the cost of distribution to domestic consumers, whereas the value for coke gas is reported at the place of production. The aggregate output of coal gas in 1915 was 128,103,346,000 cubic feet, valued at $48,882,007, an increase, compared with 1912, of 43 per cent in quantity and 33 per cent in value.

Water gas enriched with oil—carburetted water gas—is more generally used in cities than coal gas. The quantity of water gas manufactured and sold in 1915 was 126,129,569,000 cubic feet—nearly as much as the combined output of coal gas from retorts and coke ovens—and was about 47 per cent of the total quantity of artificial gas sold.

In California, Arizona, and Oregon, nearly all the artificial gas produced is made from oil, and in some other States there are oil-gas plants. The quantity of oil gas manufactured and sold in the United States in 1915 was 13,971,333,000 cubic feet. The aggregate of oil and water gas sold in 1915 was 138,100,902,000 cubic feet, valued at $124,950,125, an increase, compared with 1912, of 13 per cent in quantity and 12 per cent in value. The aggregate value of oil and water gas in 1915 was 90 cents per 1,000 cubic feet, compared with 92 cents for coal gas from retorts.

It is not possible to obtain complete figures showing the sale of artificial gas for various uses, for the reason that in many cities the gas used for illuminating and that used for fuel is not metered separately. The statistics collected by the Geological Survey for 1912 showed that 47 per cent of the artificial gas sold was used for illuminating, and the statistics for 1915 show that 30 per cent of the gas sold for illuminating, 48 per cent for domestic fuel, and 22 per cent for industrial fuel.

HEAVY OIL EXPORTS

According to the Department of Commerce total exports of oil of all kinds from California in July, 1916, were valued at $1,597,530. The total quantity of crude and fuel residium was 48,325,488 gallons. Of this quantity 7,605,873 gallons was refined oil, illuminates, distillates, gasoline and lubricants, valued at $770,340.

The total exports of California fuel oil during July was 40,556,384 gallons (963,247 barrels) valued at $821,869, an average per barrel of 85 cents. California exported a trifle over 40 per cent of all American fuel oil shipped to foreign countries during July, 1916.

Blyth, Wittier, Co., announce the offering of the entire issue of the General Petroleum, ten-year, 6 per cent first mortgage bonds at par. The issue if $1,400,000, and is offered at par, yielding the purchaser 6 per cent on his investment. In the circular mailed to customers the following facts are set forth:

"1—The physical property of the company, upon which these bonds are an absolute first closed mortgage, is valued at more than $13,000,000 or nearly ten times the issue.

"2—The company has demonstrated its earning power over a period of years. Most recent earnings reported by Messrs. Haskins & Sells are at the rate of more than twenty times annual bond interest.

"3—Audited balance sheet shows an extremely sound condition of affairs, and no further expenditures of importance are contemplated or required.

"4—Sinking fund will retire all bonds within ten years at rate of one-tenth annually. This assures a ready market for the bonds at all times.

"5—The organization of the company was directed by successful bankers; legal matters were supervised by Messrs. Goodfellow, Eells, Moore & Orrick and approved also by Garret McEnerney, Esq.

SAVE MILLIONS WITH THOUSANDS

By an expenditure of $35,000, the Bureau of Mines is in position to prove concretely that it has saved a minimum of $50,000,000 to the oil industry of the United States. There is reason to believe that the total saved as the result of the Bureau's work reaches a higher figure, and it is certain to continue increasing with the more extended application of the methods which it recommends.

The whole purpose of the petroleum work of the Bureau of Mines may be summed up in the statement "that it is working for the elimination of unnecessary waste and for the conservation of the country's petroleum resources." The Bureau is endeavoring to introduce the most efficient methods of drilling—methods that will not only conserve the natural gas, but that will protect the oil sands from premature flooding by water. The Bureau is ready to demonstrate any of the methods it recommends. It has practical engineers in its employ to perform these services.

When the Bureau entered the Oklahoma field three years ago, the method of drilling in vogue allowed a large percentage of the natural gas to waste to the atmosphere. The Bureau's engineers demonstrated, by actual drilling of wells, that by the use of the methods recommended by the Bureau it is practicable to drill oil or gas wells without wasting commercial quantities of gas. After three years' work, the value of the Bureau's methods are fully appreciated in Oklahoma, and has resulted in the universal adoption by the more progressive operators of this method, not only in the Oklahoma fields but in the Kansas field. In the latter case the operators were mostly from Oklahoma, however, and they adopted the method voluntarily. It is the object of the Bureau of Mines to extend this method to other States where it may be applicable. It is ready to co-operate with the producer in order to better drilling methods in any field. The Bureau's engineers have consulted and conferred with operators throughout the United States, giving them the benefit of their experience.

The Bureau is also carrying on an investigation with the view of increasing the recoverable percentage of oil from sands. By the present methods this recovery is less than 50 per cent. The Bureau's investigation will call attention to the possibility of increasing this percentage.

An investigation is also being conducted as to the best results of protecting oil sands from infiltrating waters with the view of placing the information before the operators.

An investigation, also, is in progress on oil storage. This is being conducted with the view of preventing losses from evaporation and fire. The Bureau is calling attention to the unusually high aggregate of these losses. The comparative cost of different kinds of storage is also being furnished oil operators interested. The matter of protecting oil tanks from lightning is the object of special consideration just at this time. A report covering the findings of the Bureau, in this regard, is to be published in the near future.

Statistics are being compiled in the various fields showing the rate of decline and the ultimate production from these fields.

The drainage of oil sands and the spacing of wells is to come in for important consideration with the view of reducing the cost of drilling to a minimum.

Cracking of petroleum has called forth intensive investigation by the Bureau. The results of this work have been of great value to the oil industry. Without the Rittman process, it is believed the independent oil refineries, eventually, would be put out of business as the Rittman process is the only one which offers real competition to the Burton process, which is controlled by the Standard Oil Company. This work, also, it is expected, will provide the means for the utilization, for motor purposes, of a large amount of petroleum which is not now used.

The Bureau is carrying on various research problems dealing with the chemistry of petroleum. It is co-operating with numerous refineries who are developing the Rittman process, and in addition to this, the Bureau is co-operating with the Navy Department and is to supervise the testing of the naval reserves.

In co-operation with the Bureau of Indian Affairs and with the General Land Office, the Bureau is looking after the development of oil on Indian and public lands.

An investigation which is attaining much greater importance is that pertaining to oil shales. This work will include, during the present year, the investigation of Scottish practices by the Bureau of Mines engineers. Statistics are being collected as to the refined products of petroleum with the veiw of publishing this data annually, or oftener.

The total appropriated for the petroleum work for the Bureau of Mines is $70,000 this year. This is the total amount requested by the Bureau. Quite contrary to the experience of the Bureau of Mines and Geological Survey in other branches of mining, Congress has shown no disposition to be niggardly in its appropriations for oil investigation work.

PATENTS RECENTLY GRANTED

The following recently granted patents are reported expressly for the *California Derrick* by Joseph M. Nesbit, Patent Attorney, Park Building, Pittsburgh, Pa., from whom printed copies may be procured for 15 cents each:

Apparatus for Cleaning and Purifying used Gasoline, Naptha, or the like, George E. Olsen, Green Bay, Wis., assignor to Troy Laundry Machinery Co., Ltd., Chicago, Ill., 1,199,491.

Process for Producing a new Motor-Spirit, William Landes, Wichita, Kans., 1,199,909.

Jack for Pumps and other purposes, William L. Dayton, Fort Worth, Tex., assignor to Power Reduction Company, Fort Worth, Tex., 1,201,158.

Drill Jar, Charles R. Bryson, Pittsburgh, Pa., 1,200,465.

Leak Detector for Oil Well Casings, Joseph Gilmore, Mead Township, Warren County, Pa., 1,200,722.

Tubing Catcher for Oil Wells or the Like, William H. McKissick, Taft, Cal., 1,201,483.

Valve for Deep Well Pumps, John J. Becker, Los Angeles, Cal., 1,201,543.

Gasoline Separator, John Glenn Cobb, West, Tex., 1,201,558.

Method for Producing Pure Tar Distillates, Meilich Melamid, Freiburg, Germany, 1,201,601.

Pumping Machinery, John J. Booker, Los Angeles, Cal., 1,202,151, and 1,202,152.

Fishing Tool, Edward J. Sharp, Los Angeles, Cal., 1,202,232.

Pumping Packer with Gas Escape, Lawrence E. Robinson, Coffeyville, Kans., 1,202,319.

Oil Well Strainer, Otis Hardin, Humble, and Veerin B. Daniels, Sourlake, Tex., 1,202,515.

Underreamer, William M. Keck, Coalinga, Cal., 1,202,727.

California Derrick

The Oil Authority of the Pacific Coast

PUBLISHED MONTHLY
—BY—
The California Derrick Publishing Company
DR. CLARENCE E. EDWORDS .....Editor
E. L. MACKEY ..... Business Manager

OFFICES
509 Sansome Street, San Francisco, California
Telephone Sutter 2984
Editorial Rooms 417 Montgomery St., Room 422
Telephone Douglas 3617

Subscription price, per year, $2.00 **Foreign $2.25**
Advertising Rates on Application
Entered as second-class matter February 17, 1912, at the postoffice at San Francisco, Cal., under the Act of March 3, 1879.

THE DERRICK'S CREED

The California Derrick has no axe to grind, no company to promote, no stocks to sell, no "interests" to bow to. Not dominated by any company, but faithful to California's Oil Industry.

THE ELECTION AND THE FUTURE

Out of one of the most exciting elections ever held in the United States comes the re-election of President Wilson. It was a clean-cut election, not clouded by extraneous matters, such as were found four years ago, and in the last analysis it means that the people of the country are satisfied with President Wilson's past record and believe in him for the future.

Many causes will be suggested as contributing to the result, but what is most apparent is the fact that the American is naturally a peace-loving individual and because of this there came to be a prevalent belief that President Wilson had kept the country out of war while all the rest of the world was cutting each others' throats. There is no doubt that many will give much credit to the "labor vote" because of the Eight Hour law, but this can hardly be considered a controlling factor. That it had some influence goes without saying, but that it had a material effect on the result is not at all probable.

The several measures which were forced through Congress by President Wilson, hitting "Big Business" had the double effect of antagonism on the part of large corporations, and of friendliness on the part of the thousands who have been led to believe that all the ills of the country are due to these large corporations.

The result of the election depended largely upon two naturally republican states—Ohio and California—and when both of these went for Wilson it meant his election. The reason for these two states siding with the President lies in internal dissensions. There was internal trouble in the Republican party of both states, and through some unaccountable lake of political acumen the Republican National Committee failed to take notice of the disquieting state of affairs.

In California there is much recrimination and both sides to the controversy are trying to lay the blame on the "other fellow." The Old Line Republicans say that Johnson threw Hughes down and worked for Wilson, while on the other hand the Johnson adherents say that the Old Guard tried to double cross Johnson and in doing so lost the state to Hughes.

To an outsider it looks very much as if the state went to Wilson because of the bungling manner in which the Hughes campaign was conducted both by his friends in California and the National Campaign Committee.

But whatever be the cause, there is to be four years more of Wilson. What is of greatest interest to the people now is the attitude of President Wilson in the future, when he will not be hampered by political necessities.

Will he take more decisive action with regard to England's transgressions?

Will he hold Germany to stricter accountability?

Will he put a stop to the depredations of Villa?

Will he threaten the business interests of the country with further hampering legislation?

The future welfare of the country is large in his hands, with one of the crises of empire confronting him. We are surrounded by terror and turmoil and so far have gone along in peaceful pursuit of our usual occupations and business. If the President continues to conduct the affairs of state along the same sane and safe lines that marked his first administration, there is no question that we shall come out of the disturbance without an embroilment of the nation in war.

Wilson is again the President and it behooves every American now to hold up his hands in his work.

THE GASOLINE REPORT

Following closely upon the work of the investigation into the gasoline industry, the Federal Trade Commission is undertaking a nation-wide investigation of the oil industry in accordance with the direction contained in the Gore and Owen Senate resolutions. This will include the producing and refining industries, together with special attention to competitive conditions which will involve the retail trade. The subject of pipe lines having been fully treated in a recent report of the Commission, will of course not be involved in the present work.

The Commission's gasoline report probably will be reported to Congress early in December. It has gone through several revisions. Indeed the proof sheets have been sent back to the Government Printing office for correction three times, until the report has reached its present stage. The revisions that have been made relate almost solely to "conclusions" and "inferences" drawn by an expert who wrote the first draft of the report. This gentleman came to Washington with what he presumed to be a complete knowledge of the oil industry. He was the only one who had such complete knowledge, according to his own opinion. To him the Standard Oil Company had horns and cloven feet or was an octopus with death-dealing tentacles. He had read all about the Standard somewhere. So that, when the Federal Trade Commission came to take testimony on the gasoline industry he interpreted everything in conformity with his preconceived notions. Incidentally he gave the Commission a lot of trouble, but he has finally learned considerable about the oil industry and investigations in general, and has corrected many of his preconceived opinions gathered from a superficial study of the business.

The fact is, the Commission has a corps of very clear-headed investigators and the Commission itself is composed of men of sound judgment, who know that neither they nor any other group of men can give to the public a report showing prejudice without condemning them-

selves as prejudiced investigators. Then, too, the Commission is endeavoring to make a reputation that will commend its work to the business people of the United States in the same way that the Interstate Commerce Commission has commended itself to the country. They have gone a long way toward doing that, and it is understood that when the gasoline report comes out it will be as lacking of prejudice as was the pipe line report. It will state facts as shown by the testimony and will not contain romances. The report will contain what has been discovered and not what was expected to be found.

RAPID RISE TO FORTUNE

The following interesting story is from the Oil City *Derrick* in a letter from Ardmore, Oklahoma:

From a hard-working printer and the editor of a small Republican weekly in a Democratic community, Roy M. Johnson, of Ardmore, is now worth more than a million dollars. Mr. Johnson and his associates, Edward Galt, Sam Apple and Wirt Franklin sold today 74 per cent of the stock of the Crystal Oil Co. to the Sinclair Oil & Refining Co. The price paid was a little in excess of $1,500,000. The Sinclair Co. already owned 26 per cent of the stock of the company, which it purchased several months ago from A. T. McGhee. The sale includes 17 steel tanks and 389,000 bbls. of storage oil. The Twin State Oil Co. owns the operating right to a part of this property and the operating right of the other portion is owned by the Dundee Petroleum Co. The land transferred with the stock covers 1,810 acres and of this amount about 800 acres are in the proven field.

H. F. Sinclair, president of the Sinclair Oil & Refining Co., and several of his associates and other oil men and bankers were here Monday and visited the fields and following the trip the deal was closed. The party while here also inspected the refinery at Gainesville which is owned by the Wichita Natural Gas Co. or the Doherty interests. Mr. Sinclair stated while here that he was making good progress with his line from Oklahoma to Chicago, and he made the positive statement that the pipe line would not be extended to Healdton. He stated that if he did any pipe line construction work to care for the Healdton production, that he would build an 8-inch line to the Gulf. He also stated that he would not build any refineries in this portion of the State. This company purchased the Healdton Oil & Gas Co. for $700,000; the Ardworth property for $750,000, the McGhee interest in the Crystal for $390,000 and the balance of the Crystal stock for $1,500,000. The company is also on a deal for the Apple and Franklin Oil Co., which will in all probability be closed before the end of the week.

The local companies are one by one turning loose their holdings and the Healdton field, which was at first owned largely by inexperienced oil men, is passing into the hands of the big companies. However, some large holdings are still owned by local people. Westheimer & Daube, the Gates Oil Co., J. L. Hamon and the Bull Head Oil Co. are among the larger local companies.

The Carter Oil Co. has also been active in this field recently and it has practically closed a deal for four properties.

While the local men are turning loose in the Healdton field, they have large holdings in the Fox field, which promises to be a greater field than Healdton.

The oil men who come to Ardmore will soon have much better conveniences than they have now. Work will be begun during the month of November on a $200,000 hotel, the principal stock of which will be owned by J. R. Sharpe and in addition to the hotel a road will be built from Ardmore to the fields. R. A. Simpson, president of the Gates Oil Co., made the positive statement today that the road would be built at once and that Julien Fields of Sherman, Texas, was going over the route today to submit an estimate of the cost. The road will be built straight without reference to section lines and a toll will be charged for its use by those who have occasion to drive over it. When the initial cost has been met the road will be given to the county.

Humble Oil Co., in the northeast quarter of section 24-4-3 in the southeast extension to Healdton, has found 150 feet of oil sand. The well looks good for 200 bbls. Section 19-4-2, farther east, is being played heavily now and it looks like the extension will produce a large amount of oil.

J. F. E.

TURN TO OIL SHALES FOR OIL

An investigation now in progress by the Geological Survey and the Bureau of Mines is looking ahead to the time when the present increase in petroleum production will give place to a general decline. Already in no less than eleven States the crest of the wave of production seems to have passed, although the states of Oklahoma and Wyoming, with increasing yields are more than offsetting the decline in the other States.

In view of the rapidly growing demand for gasoline and other petroleum products it does not seem too early to be taking account of stock for the future. Therefore, in addition to the attention being given to increasing our geologic knowledge bearing on the possible extension of oil fields, the Geological Survey has begun to study the bituminous and oil shales.

One belt of black shales extends from New York to Kentucky and Tennessee. Another large area is in Colorado, Utah and Wyoming. These vary in richness. In Utah the bituminous shales from one bed yields as high as two barrels of oil to the ton. The black shale at New Anbany, Ind., yields on distillation only 7 to 12 gallons of oil to the ton. Elsewhere in Indiana and Illinois the shale overlying one of the coal beds has yielded one-third to one-half barrel and this shale is being removed in stripping the coal, and is thus at present a waste product. While this source of oil is not promising under present conditions, yet we are learning how wide spread are these occurrence of oil-bearing rocks and how large in the aggregate is their content of oil. Dr. Ashley, for instance, has figured that one bed of this shale in Indiana contains 100 billion or more barrels of oil.

Bituminous shales were utilized abroad before Pennsylvania oil was discovered and their distillation may be a part of our chemical industry at some future day, and indeed that day may not be far distant, so rapid is the industrial development of today.

EARTHQUAKE BRINGS IN DRY WELL

Earthquakes are sometimes necessary to bring a realization of what should be done in the oil field as well as elsewhere, according to a report that comes from the Maricopa field. After having been perfectly dry for a period of two years, a well on the Midway Oil Company's lease, on section 34, 12-24, resumed production immediately after three severe earthquake shocks which visited the west side oil fields, had shaken the formation loose. There is a suggestion here by nature that it might be a good idea sometimes to spud a dry well.

It is reported that the Coalinga Unity Oil Company, will soon begin drilling a new well on section 12,24-14.

SALT WATER IN OIL FIELDS DIFFERS FROM THAT IN OCEAN

The generalization that oil is found in anticlines where the strata are saturated with water and in synclines where the rocks are dry, holds fairly well in the oil fields of the United States, though there are only a few fields in which the latter condition obtains. Thus in the Appalachian fields all but the deepst sands carry water under considerable head; and the oil and gas usually occur in anticlines or on structural terraces. In some localities the sands appear to contain no water, and in these pools the oil may be found in synclines.

The Clinton sand of Ohio, however, seems to carry little water yet the hydrocarbons are usually found in anticlines or structural terraces.

In the Texas and Oklahoma fields the sands generally carry water and the oil and gas usually occur in the anticlines. In California conditions are different, the oil for the most part having migrated from lower formations and collected in porous lenses in the higher beds; it may, therefore, occupy anticlines, synclines or even practically smooth monoclines. The California fields are located in a very arid region, because of the peculiar conditions that have controlled the accumulation of the California oil, it is not practicable to compare these fields (as regards rainfall and relation of oil to this structure), with other fields of the United States.

The fact that oil field water is generally salt water seems to indicate that if the amount of rainfall bears any relation to the occurrence of oil, this relation is not a direct one. The U. S. Geological Survey's investigations in the California fields show that the deeper waters are, as in other oil fields, strongly saline. In some instances they correspond almost exactly with the water of the present ocean, as regards both composition and concentration. The chief differences between these waters and ocean water are (a) decrease or complete absence of sulphate in the oil field water, and corresponding increase in carbonate; (*b*) decrease of the magnesium-calcium ratio, the calcium being in many cases more abundant than the magnesium. This water is believed to be essentially connate water—i.e., sea water entrapped in the beds when they were laid down. The decrease of sulphate is probably due to interaction with the hydrocarbon material of the petroleum, by which the latter is oxidized to carbonate, and the decrease in magnesium may be due to dolomitization. Near the outcrop of the beds the water is not a pure connate type, but is mingled with meteoric water, which in that region contains chiefly sulphates. Under some conditions this sulphate water may be changed to a carbonate water, presumably by the action of the hydrocarbons. Thus the shallower waters in these fields carry chiefly sulphate, while those associated with the oil carry either carbonate or chloride, depending on the proportions in which meteoric and connate waters have entered into their composition.

In the Appalachian oil fields, however, the waters are of very different character, being strong brines or bitterns. Most of these waters are highly concentrated, and the ratio of calcium and magnesium chlorides to sodium chloride is in some cases 1 to 1 instead of about 1 to 4, as in sea water. In these fields, therefore, meteoric water does not seem to have access to the oil bearing stratum, and this condition is probably more common than that which obtains in the California fields. In other words, the very fact that oil can accumulate and remain in the strata during long periods of time indicates that if salt water were originally included in the rocks it would be retained also, and that any extensive incursion of meteoric water would dissipate both. Whether the oil occurs in limestone or in sandstone, it is therefore natural to expect the associated water to be salty.

OPPPOSES PHELAN OIL BILL

CHICAGO, November 16.—The life of the United States navy is at stake in the fight to retain government control of the California petroleum reserves, Assistant Secretary Roosevelt of the Navy asserted in the paper read tonight before the annual meeting here of the American Mining Congress.

"It may be set own as a definite conclusion," said the paper, "that the navy cannot revert to coal burning vessels without enormous loss of efficiency and, furthermore, that the navy will not so revert."

The article is the Navy Department's opening attack in the renewal of the fight in Congress over the Phelan amendment to the general oil land bill designed to protect the claims of California operators. Navy officials have insisted that the policy of building oil burning ships could not be carried out if the amendment prevailed and Secretary Daniels appealed directly to President Wilson when action seemed imminent during the last session of Congress.

Roosevelt's paper declared that oil fuel for the navy meant increased speed and cruising radius, control of smoke for smoke screens, reduced fireroom by 55 per cent, refueling at sea with an increased efficiency of 25 per cent: ability to sustain maximum speed for long periods of time without clogging furnaces; flexibility in speeds and finally, greater safety from submarines as in modern American ships the fuel oil is disposed along the bottom to cushion the blow of exploding torpedoes.

The 35-knot battle cruisers, scouts and destroyers authorized by Congress could not be built, the paper asserted, if coal fuel was to be employed. The paper continues:

"It is estimated that the navy should have on hand in time of peace storage tanks capable of holding a full two-years' supply for the fleet in war time. For our present needs we should probably have 2,000,000 barrels so stored. Ten years hence we ought to have 20,000,000 barrels.

"Oil men are much inclined to ridicule the idea that there can ever be a shortage of oil for naval needs. The base of this is perhaps a lack of knowledge of what our future needs are to be. The navy burns today in time of peace about 842,000 barrels a year. The construction of ships already authorized by Congress will call for an annual consumption of 6,721,000 barrels in 1923."

Roosevelt said the navy was content that every just claim against the reserved lands should be compensated, "but they must cease to remove oil from these lands." There was no question, he said, that a fair method of adjustment could be found.

TO DEVELOP OIL IN NEW MEXICO

A new oil company, with capital of $100,000, has been formed at Artesia, New Mexico, for the purpose of oil development in the Pecos Valley, of that state. There are several small producing wells in this valley, but no extensive work has been done. Twenty years ago a geologist of much repute found oil in the valley and predicted a large oil field, but this is the first time concrete work has been decided upon.

OIL CITY DERRICK FIELD REPORT FOR OCTOBER

The feature of the operations in the oil fields during October as compared with September, are a decrease in wells completed, a falling off in new production and no particular change in the amount of work underway at the close of the month. During October 1,688 wells were completed in the divisions covered by the *Derrick's* report, which number was 254 less than the September figures. The new production amounted to 106,015 barrels, a decrease of 5,334 barrels. There were 61 fewer failures and a decline of 19 in the number of gas wells.

At the close of the month there was a net decrease of only two in the amount of new work underway. Rigs were reported as showing an increase of 54, but there were 82 fewer wells in the drilling list.

Subtracting the dry holes and gas wells from the total completions leaves 1,257 productive wells as the main result of the month's work. In September the productive wells numbered 1,431.

The principal change in the figures of the Pennsylvania division for October in comparison with the September report was in the amount of new production obtained. The new wells completed during October were 13 less than in the previous month, but there was a gain in the initial production of 2,368 barrels. Nearly 1,800 barrels of this is credited to West Virginia, and most of the balance is made up by southeastern Ohio and the lower counties of Pennsylvania. The older districts show little change. West Virginia's new production came from the discovery of gusher wells in the Dents Run district, near Mannington. While the pool is expected to be enclosed in a small area, the wells are showing good staying qualities, and are big money makers at the present price of crude petroleum. Southeastern Ohio offered few large producers in the deep sand districts, but the general average was better than in the previous month. Work was fairly active throughout the division during October, and it is surprising how many spots the producers find in the old fields which offer chances for wells which will pay. Wildcat work was less prominent during the month. Twenty-four fewer dry holes were reported. Of the 63 failures, 49 were in West Virginia and southeastern Ohio, while none was in the territory north of Venango county. Gas wells numbered 70, a decrease of only one. Of this number West Virginia, southwest Pennsylvania and Venango and Clarion furnished 52, and some were reported from all the districts.

New work at the close of the month in the Pennsylvania division showed a good increase. A total of 833 rigs and drilling wells were reported, the increase being 26. The greater part of this was made up of gains in West Virginia, Butler and southwestern Pennsylvania.

From the Central Ohio, Lima, Indiana and Illinois districts the field work during the month was of a routine order. A large part of the operations in Ohio is made up of the activities of the gas companies. An occasional producer above the average in the Lima pools brings out more work, but the output is not affected by the new production obtained, more than to check its declining tendency. Illinois and Indiana still offer inducements to the wildcat operator, and it is to be expected that more pools will be found in those States. In northwestern Ohio, Indiana and Illinois 62 fewer wells were completed than in September and new production showed a decrease of 1,016 barrels. There were seven fewer failures, and three more gas wells. At the close of the month in these same divisions the total decrease in new work was 18.

Kentucky is attracting more attention than any other State east of the Mississippi. Its two main pools, Irvine and Scottsville, are being rapidly developed, and wildcat work is extending over most of the counties in the eastern and southern portions of the State. The wells are shallow but they also show a large production, and must have fair staying qualities, to judge by the increase in the runs. During October 152 wells were completed in Kentucky, credited with a new production of 3,321 barrels. Of the completions all except 11 were reported from Irvine and Scottsville and the same pools furnished all the new production with the exception of 32 barrels. Irvine was also responsible for 24 of the 30 dry holes reported, the others being wildcat ventures. At the close of the month new work showed a net increase of four. In this the new pools show a slight decrease, as nearly 40 per cent is widely scattered through many counties. During the next three months several fair prospects will be tested out in the State, while those who follow the hit-and-miss method are numerous and many stumble on to a new pool. The impetus given to the oil industry in Kentucky by the discovery of the Irvine field, promises to be lasting. This pool, it is believed, is nearly developed, and operations there are expected to decrease soon.

The totals of figures from the Kansas fields for October show a decrease of 255 wells for the month and a corresponding decrease of 3,978 barrels as compared with the production of September, the dry holes showed 61 less for October than the previous month and the gas wells were nine short of the September figures.

The rigs showed an increase of 72 over September figures but this gain was offset by the 55 decreases in

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SOUTHERN PACIFIC

Write for Folder on the Apache Trail of Arizona

the drilling wells and a decrease of 83 in the total of new work under way.

As reflected by the field report of operations in Oklahoma for October, work is holding up fairly steady. Sixteen fewer wells were completed, including those for Arkansas, but there was a gain in new production of 4,498 barrels. Three fewer failures appear in the list. Several prospective pools are awaiting further development to determine their value. The one in Garfield county is still represented by only one well, but it is of sufficient size to call attention to the western sections of the State. A belt of 3 miles wide, heretofore looked upon with doubtful favor, has been made fairly good hunting ground for the pioneer operator. The new work at the close of the month showed an increase of 28 in rigs and a decrease of 94 in drilling, including the operations in Arkansas. The net loss in new work is 66, but a gain in rigs would indicate greater activity for November.

A loss of 11 in completions and of 557 barrels in new production was reported from the Texas Panhandle. This unfavorable showing, however, was offset by the discovery of 215 barrels of new production in wildcat wells, and a net increase of 24 in new work at the close of the month. Indications are very favorable in several localities for the opening of new pools.

North Louisiana was almost featureless during October, as no important producers were found, and one-half of the 40 wells completed came in failures. The decrease in new production was 3,440 barrels. A good gas territory has been developed near Monroe, and this will lead the wildcatters further away from the Caddo center. There was also a loss of 22 in new work for this division.

The Gulf Coast pools maintained their reputation during October for a large initial production from a few producers. Sixty-seven wells were completed of which one-third were failures, but the others had a new production of 25,470 barrels. This was an increase of 6,460 barrels over the September report. Large wells at Sour Lake are making up for the loss of gushers at Humble, while Goose Creek and Vinton are adding to the amount obtained. The close of the month showed a net increase of 11 in the amount of new work underway.

Taking the dry holes and the gas wells from the total of completed wells leave 1,246 producing oil wells for the month, or 185 under the same figures for September.

The only changes in the crude petroleum market during the month were those affecting the product of the Pennsylvania division. On October 10 there was an advance of 10 cents in all grades except Ragland, and another of the same amount on October 20. In each instance only five cents was added to the price of Ragland oil. On October 31 the price of Cabell and Somerset oil was reduced five cents.

SPLENDID RECORD OF SOUTHERN PACIFIC

Out of 240,000,000 passengers carried over the lines of the Southern Pacific Company during the past eight years, but one person has been killed in a train accident. This was one of the statements made by Charles S. Fee, Passenger Traffic Manager of the Company, who spoke at the weekly luncheon of the San Jose Chamber of Commerce, October 31.

Mr. Fee spoke upon "The Southern Pacific Company As a Manufacturer of Transportation."

"The Southern Pacific Company operates rail and water transportation lines aggregating some 16,000 miles, 10,500 of which are rail operated by steam, 1,000 operated by electricity, and 4,500 steamship and boat," he said.

"The capital stock of this company is held by more than 33,000 persons, of whom 13,000 are women.

"Our railroad in connection with its steamship lines, stretches from Portland, Ore., and Ogden, Utah, via San Francisco, Los Angeles, and New Orleans, to New York City. These may be called plants for the manufacture of transportation for freight and passengers. The plants are located in nine different states, namely, California, Oregon, Nevada, Utah, Arizona, New Mexico, Texas, Louisiana and New York, and in two foreign countries, namely, Mexico and Cuba. It is in connection with business that I will direct my remarks this afternoon.

"The Company operates electric systems in Los Angeles, Oakland, Berkeley, San Jose, Fresno, Stockton, Visalia, Eugene, Salem and Portland, Ore.

"These plants give regular employment to 75,000 people, 5,000 of whom are employed in California. To this great army of employes is paid out annually in wages over $35,000,000, or nearly $100,000 per day.

"Out of every dollar earned from transportation in California, 72 cents is paid for wages, supplies, other expenses and taxes, the latter alone for the state, county, school and municipal assessments amounting to nearly $4,400,000 per annum, or over $12,000 per day.

"For materials and supplies required to maintain and operate these plants is paid out in California annually $10,000,000.

"To make the public and especially that portion of it living east of the Missouri river conversant with its transportation system and facilities as a means of reaching the Pacific Coast and the advantage of coast country, especially California, the Southern Pacific Company issued during the past year over 5,000,000 books, pamphlets, maps and folders, which were carefully distributed through our own agents and agents of connecting lines.

"The Southern Pacific was the initiator of the all-steel passenger coaches and in 1904 built the first steel passenger coach ever constructed; during the past ten years nearly all of its wooden equipment used in main line trains has been provided with steel under-frames and steel vestibule ends, besides all new passenger equipment acquired has been of the all-steel type—solely as a measure of safety.

"For the protection of human life the company has expended vast sums of money for the installation of the automatic block signal. This does not add to the earning capacity of the lines, but was installed for the protection of life and property. Thirty-eight hundred miles of the steam lines, or about 34 per cent of the company's operated mileage, is protected by this automatic block signal, which was installed at an initial cost of about $1500 per mile and requires for its maintenance annually of about $125 per mile. Practically all of the electric mileage is protected by the block signal to insure safety in operation.

"The main cause of train accidents to occupants of automobiles, motorcycles, bicycles, horse drawn vehicles and pedestrians has its origin wholly in their own carelessness. It is a matter to which the attention of this and every other chamber of commerce can fairly be drawn with the request that if it lies within your province, you can aid the railroad company in spreading the gospel that the public itself is grossly negligent in the use of highways whether as pedestrians or occupants of vehicles.

"Over and beyond all these things which I have mentioned and in which you have, I am sure, a very keen interest, we want to impress upon you the fact that the management of these plants are vitally interested to the end that the public may be given the best possible, and every employe, I am sure, is honestly striving, not only

to meet the public needs, but to anticipate them, each one discharging his duty to the very best of his ability with the right spirit toward the public, and with every desire to render them courteous, efficient and prompt attention."

DEVELOPING NEW FIELDS

The oil field report of the State Mining Bureau for the week ending November 4, 1916, shows twenty-two new wells starting to drill, making a total of 627 since the first of the present year. There were thirty-nine wells reported ready for test of water shutoff, eleven deepening or redrilling and one abandoned.

The present rate of new work will probably continue for the remainder of the year, giving a total of more than twice as many new wells as were completed during the year 1915. The rising price of oil has caused activity in all the fields, similar to that of some six years ago. A great deal of work is, of course, being done on land already known to be productive, but in most of the fields there are wildcat wells which, if successful, will develop new oil lands. All of these prospective additions will, however, probably not equal that made by the opening of the Midway field in 1910. In the Coalinga field the possibility of some northward extension will be demonstrated by a well now being drilled by the Imperial Oil Company. A number of wells are drilling in the region northeast of the old McKittrick field, commonly known as the "McKittrick Front." In the vicinity of Los Angeles three wells are drilling on the low range of hills extending from the vicinity of Long Beach to Beverly. This region is of particular interest for its oil possibilities. A few miles north of the town of Ventura two companies are drilling in new territory, one having found some of the lightest oil yet recorded in the state. In the Santa Maria field there is more activity than has been witnessed for many years and considerable extensions of the proved lands near Cat Canyon and Casmalia are practically assured. The last mentioned locality produces the heaviest oil in the state, and the efforts now being made to produce and utilize it furnish an excellent illustration of the obstructions placed in the way of the oil business by lack of constructive action on the part of the Federal Government in dealing with oil lands already developed.

HUNT MONTANA OIL

The search for oil and gas in Montana has become very active, and there is an insistent demand for information concerning the occurrence of these substances in the state.

The extension into Montana of the fields that are producing high-grade oils in Wyoming, the development of valuable gas fields in Southern Alberta, the discovery of some oil within a few score miles of the northern boundary of Montana, and finally, the recent drilling in of a large well at Havre, in Hill county, have led petroleum engineers and operators to give serious attention to "wildcatting" in Montana.

Rocks of the same age as those which are productive in Wyoming and in Alberta are known to be present over large areas in Montana, and there is every reason to believe that where the structure is favorable they will yield oil and gas.

A report on the possibilities of oil in this region has recently been prepared by the United States Geological Survey, summarizing all the available data concerning the possible occurrence of oil and gas in a considerable portion of Montana, from the latitude of Great Falls northward to the international boundary.

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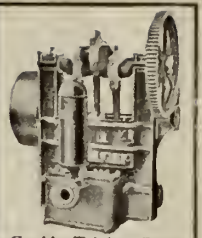

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California Concentrates

A new well is to be drilled by the Peerless Oil Company on section 13, 31-21, in the Midway district.

The U. S. Oil & Mining Company's property near Bakersfield has been leased for twenty years to the Nevada County Oil Company.

The St. Helens Oil Company, of Fullerton, is reported as having secured a lease to property near Newport, and will soon begin drilling there.

The Belridge Oil Company is reported as preparing to drill two new wells fourteen miles northwest of McKittrick.

The Greenleaf Oil, Gas and Mining Company, of Phoenix, Ariz., has incorporated with a capital of $2,000,000. The incorporators are J. R. Roach, K. B. Roach, K. B. Koggins and G. B. White.

The Security Oil Company of Los Angeles, has incorporated with a capital of $200,000. The incorporators are Oliver C. Edwards, C. L. Willis, H. A. Landes, T. A. Hawkins.

The San Diego Oil Company has incorporated with a capital of $50,000. The incorporators are J. F. McVean, Robert Fulton and Oscar W. Smith.

The Mascot Oil Company, operating on section 26, will sink eight wells in a short time, thus increasing the importance of the McKittrick field.

It is rumored that the Visalia Midway Oil Company is preparing to drill fifteen new wells.

A new well is to be drilled on the property of the Jamison Oil Co.

The Pacific Petroleum Company has incorporated at Santa Barbara, with a capitalization of $1,000,000. The incorporators are E. L. Doheny, C. E. Doheny, E. Doheny, Jr., Allen Welborn, Jr., and J. C. Anderson.

The Santa Paula Oil Company, of Oxnard, has incorporated with a capital of $100,000. The incorporators are H. R. Edwards, Norton Ware and R. K. Barrows. The company will operate in Ventura County.

The Ethel D. Oil Company is drilling a new well on section 36, 12-24.

The Palmer Union Oil Co. have begun drilling on well No. 30 in the Cat Canyon field.

Drilling was started on well No. 3 of the Pan American Petroleum Co. in Cat canyon.

Wells Nos. 1, 2 and 3 of the Doheny Pacific Petroleum Co. in the Casmalia field have been tested for water shutoff.

On the Bell ranch the Petroleum Investment Company has four wells under construction, one of which has already reached a depth of 1500 feet, the others stringing along at less depths.

The Los Tres Oil Company of Phoenix, Arizo., has been incorporated for $300,000, with G. A. Alonzo, A. Martine and Garcia Rojas, all of San Antonio, Texas, as incorporators.

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The State Consolidated Oil Company, operating in the Ventura field, is shipping 52 degree gravity oil to market.

The Canadian Pacific Oil Company is rushing operations on section 4, 32-23, so that work of drilling a new well may be started within the next two weeks.

The Webster district of Madera county, California, is to be drilled for oil. Seventeen leases have been signed up by interested parties in Los Angeles.

The Standard Oil Company has purchased the Fearless Oil Company near the north end of the town of McKittrick. The property embraces all of section 16, 30-22, and is undeveloped.

The Comstock Crude Oil Company is preparing to resume operations on the well that has been going down for more than a year past on the edge of the Maricopa field. The well is now down to a depth of 4600 feet and is the deepest drilling well on the west side.

ASSOCIATED TAKES OVER NEW LEASE

Through a deal which took effect on October 16, the Associated Oil Company has taken over the Mount Diablo lease of the North American Oil Consolidated on section 20, 32-23, in the Twenty-Five Hill district. It is reported that the plans of the North American to drill twenty new wells, nearly half of which are now down, will be carried out by the Associated. There are now thirty-nine producing wells on the property, with four rigs up, one idle drilling well and one idle producing well. As this is less than 18 gravity territory it emphasizes the Associated Oil Company's need for a greater production of fuel oil to supply the demands of the Southern Pacific Company. While the Associated has a number of good properties the greater part of its wells produce a high gravity oil.

COMSTOCK CRUDE SOLD

Report comes from Maricopa that the Lakeview No. 2 Oil Company has taken over the lease of the Comstock Crude and one well, on section 34, 12-23, on the outer edge of the Maricopa flat, in the district which is as yet unproven oil property. The well on the property has been drilled to a depth of 4650 feet, passing through several strata of gas and oil sands. No production worth while was encountered.

Considerable activity is noted in this district and land owners are refusing what would have been considered flattering offers a year ago. There seems to be a general demand for property adjoining the flat, but those who hold it are content to wait for further developments.

IN VARIOUS DISTRICTS

The Kern Trading and Oil Company is making strenuous efforts to increase its production, and has eight strings running in the Midway Sunset district. On section 7, 32-23, where the No. 25 well has kept up a steady flow of more than 3000 barrels a day for the past three years, the No. 37 is being bailed down. The No. 36 has a string of casing landed and is now standing cemented. It will be water tested in a short time. On section 35, 32-23 the No. 27 well is down 1000 feet and is being drilled with a rotary. Derricks are up on this section for Nos. 24, 25 and 26 wells. On section 9, 32-24, the No. 20 is bailed with preparations for bringing it in. It is in the oil sand at a depth of about 2800 feet.

A plan to drill for oil near Tulare lake is being consummated by the Midway Gas Company and the San Joaquin Light and Power Corporation. The land on which it is proposed to drill is five miles north of Tulare lake, and eight or nine miles south of Lemoore and about 22 miles east of Coalinga. Leases have been secured on about 1000 acres of land and the companies are looking for more.

The Capital Crude Oil Company has resumed drilling on its property in Santa Paula Canyon, Ventura County, after several years of inactivity. The first new well is to be put down on the line of the Bard Oil and Asphalt property, recently purchased by the Doheny interests. The production is a high grade refining oil.

The property of Montgomery and Cole, on section 8, 29-28, Bakersfield district, one-half mile from the nearest well in the Kern River field, has brought a producer. The new well is pumping 110 barrels a day, and is slightly heavier than the average product of the field.

The Pan American Petroleum Investment Corporation, with holdings of 10,000 acres of oil land, eight miles in length lying in the Santa Maria field, has commenced drilling. Its well No. 1, is down 1000 feet. Wells Nos. 2 and 3 are also drilling.

THE FAKE PROMOTER

Goldfield (Nev.) News:—Richard C. Flower, son of a country clergyman, graduate of Northwestern university, lawyer, preacher, "healer," promoter of fake medical companies and other corporations organized only that their stock might be sold, is said to have taken in about $1,000,000 from a gullible public, at the expense of being indicted some 500 times and convicted twice. His sudden death in a Hoboken variety theater a week ago was unrecorded for forty-eight hours. He was 73 years old, leaving a widow, and whether he was rich or not remains to be decided.

The peculiarity of his career is that it disclosed ability, energy, persistence that applied to straight-forward undertakings would almost certainly have got prompt recognition. Flower, "Dr. Flower," was one of a type of semi-criminal minds. The term semi-criminal is rightly and deliberately used. Probably he never expected to figure as a criminal. He decided while still young to get as close to the border line of crime as was safe, and never venture beyond. "Grand larceny," to which he pleaded guilty on his last trial before he began his term at Blackwell's Island, is often a constructive offense. If you persuade another person to invest money in such a way that you profit by it you may always be accused of grand larceny and the burden of proof is on you to show justification.

This is what happened time and again to Flower. He was a magnetic talker. One widow is said to have trusted him with $500,000 at one time to invest. He rarely failed to find his "suckers." But the end of it all was not happiness.

The unfortunate thing is that so many men of Flower's views of life, of Flower's standard of ethics, "get away with it," as the colloquial expression goes. That tempts others to try. Law cannot reach and punish all dishonesty. It never has. It never will. Why not get rich by the dishonesty that, for the time being, is not punished? That is an unspoken question in many a young man's mind. But the colleges, at least, should emphasize, indeed they do emphasize, the higher standard. The man who never intentionally does wrong to his neighbor is pretty sure not to go to jail through any accident of law interpretation. And his career, however humble, will be preferable in every way to that of Dr. Richard C. Flower.

NEW OIL FIELD NEAR LARAMIE

The largest oil deal ever put through in Albany county, Wyoming, and one of the biggest deals consummated in recent years in the entire State of Wyoming, has just been closed in Laramie by L. A. Ewing, owner of the White Raven mine, one of the famous silver producers of Colorado, whereby he secures operating rights on upwards of 5,000 acres of proven oil territory.

The property is located a few miles west of Laramie and it is what is known as the Big Hollow district. It has been drilled under the management of Tom Harris, a thoroughly experienced oil man, for the past three years and six wells have already been put down to oil and gas.

Mr. Ewing has since made a deal with the Wyoming Apex Oil Company, with headquarters at Denver, Colorado, whereby he becomes president of the corporation and turns over his entire rights and holdings to the oil company. A cash fund of $25,000 for the further development and equipment of the property has been positively arranged for. Well No. 7 is now being completed and is just entering the oil sand. Well No. 8 will be started within the next few weeks and drilling will be continued with one or two rigs all through the winter.

Arrangements have been completed for the sale of the entire product of the wells to one of the largest operating corporations in the West and a deal is in hand for supplying the town of Laramie with gas for manufacturing and domestic purposes. The property is within a few hundred feet of railway.

These holdings have been completely examined by State Geologist R. D. George, of Colorado, who reports most favorably.

A WORLD WIDE PROSPERITY

Not only do all kinds of statistics (industrial, railroad, mining, agricultural, mercantile, shipping, clearing house, labor and wage) indicate unparalleled prosperity in this country, but they indicate great prosperity in most other countries.

Japan is now prospering as never before and is rapidly reducing her national debt.

The most of the neutral countries of the world are benefitting—temporarily, at least—from the enormous expenditures for war purposes.

Even the most of the belligerent countries are enjoying a measure of prosperity. Russia and Italy are perhaps more prosperous than ever before. The rural population is receiving high prices for its products and the working classes high wages. Both are spending freely. Prince Troubetzloy gives three reasons why Russia's rural population is prospering as never before. 1. because the prohibition of alcohol; 2, because the wives of the reservists receive sufficient support from the government; 3, because the peasantry is earning high wages. Deposits in Russia's savings bank have increased 2,000,000,000 rubles ($1,000,000,000) since the war began. Russia's productive power has increased enormously in the last two years.

The working classes in Great Britain are more prosperous than ever before. The same may be said of those in parts of France and Germany. A farm land boom is said to be on in Germany. Country estates are being bought "at unheard-of prices" by those made rich by the war. In 1912 Dr. Damaschke, in Boden reform, said that, in Prussia alone agricultural land was bonded to the extent of £600,000,000, and that foreclosures were reaching alarming proportions.

Canada, Australia and Egypt are fairly prosperous despite war drains in life and treasure and poor crops especially in Canada.

LOST SOLDIER FIELD MAKING GOOD

Senator L. A. Van Tilborg, who has been in the Wyoming oil fields for the last three months, has returned to Denver for a few days' visit. He reports the activities in the Lost Soldier field, north of Rawlins, almost as great as in the first days of the boom. He says that the bringing in of a well by Wilkes Brothers recently is a strong indication that the entire field will be a good one.

The Ohio Oil Company, drilling on the Big Dome, is now down to a depth of 600 feet and expect to bring in a well any day. If its expectations should be realized, the future of that part of the district is assured.

Among the new operations started in the last week is the placing of a Star No. 28 well-drilling machine on the territory of the Range Oil Company by Walter E. Hodges, of Buffalo, N. Y. It is his expectation to continue work all winter, and the people of this oil district are watching this well with considerable interest.

Senator Von Tilborg also visited the Laramie fields on his return, and reports one of the largest oil and gas wells ever brought in, in southern Wyoming, in the Big Hollow Dome on what is generally known as the Harris tract. This well, he says, will easily produce a half million cubic feet of gas, and has a remarkable showing of oil. The people of Laramie are very much excited over this and think that they have the making of one of the biggest oil fields in Wyoming.

Reports recently submitted to the annual convention of the National Paint, Oil and Varnish Association, predict a smashing of gasoline prices by the increased production and reduction of cost of denaturel alcohol and benzol as automobile fuels.

"As soon as the export demand for both products decreases it is natural to suppose the price of both will decline," the committee stated, "so that some suitable mixtures of them can be produced in the neighborhood of 28c, and at this price it is the opinion of the chemists who have been working out this problem, that this mixture will compete with gasoline unless the price of gasoline declines below 20c per gallon. The production of both alcohol and benzol has increased to such an extent that the quantity available for new uses will prevent any advance in value."

The Petroleum Products Company has been taken off the British Trade blacklist, according to advices received by the State Department at Washington. This action followed a vigorous protest forwarded to Washington by the San Francisco Chamber of Commerce.

Statement of the Ownership, Management, Etc. of California Derrick, published monthly at San Francisco, Cal., for October 1st, 1916.

State of California County of San Francisco,——ss.

Before me, a notary public in and for the state and county aforesaid, personally appeared E. L. Mackey, who, having been duly sworn according to law, deposes and says that he is the manager of the California Derrick and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, Etc., of the aforesaid publication for the date shown in the above caption. That the names and address of the editor, managing editor and business manager are: Publisher, California Derrick Publishing Co., San Francisco, Cal.; Editor, Dr. Clarence E. Edwords San Francisco, Cal.; Managing Editor, Dr. Clarence E. Edwords, San Francisco, Cal.; Business Manager, E. L. Mackey, San Francisco, Cal.

That the owners are: Clarence E. Edwords, San Francisco, Cal., and E. L. Mackey, San Francisco, Cal. That the known bondholders, mortgagees and other security holders owning or holding 1 per cent or more of the total amount of bonds, mortgagees or other securities are none.

E. L. MACKEY, Business Manager.

Sworn to and subscribed before me this 19th day of September, 1916, W. H. PYBURN, (Seal), (My Commission expires June 8th, 1920)

WHAT IS GOING ON IN THE FIELDS

As will be seen from the regular weekly reports issued by the superintendent of petroleum and gas of California, development and prospecting work is exceedingly active, not only in the proven fields of the state, but in many new districts, and untried sections, as well.

Reports coming to the Derrick from various parts of the state indicate that the coming year will be one of phenomenal increase in the development of new territories, and while it is claimed that not more than 80,000 acres of probable oil land remains to be tested, there is no doubt that much land now believed to be devoid of oil possibilities will be brought in.

Of the undeveloped fields that are attracting attention at present none seems to hold out as much of promise of good results as San Luis Obispo county, in that section lying east of Paso Robles toward the Carriso plain. Reports are to the effect that the Standard Oil Company, the Union Oil Company and the Associated Oil Company are all quietly sizing up the conditions there, and it is reported that the Standard has already begun to sink a prospecting well near the ranch of the Trissleman brothers, on whose property a shallow well was sunk several years ago and capped. It is believed that the report from this capped well has much to do with the present activity of the big companies in that district.

Close to the Trissleman property the Co-Operative Oil Land Company has its derrick ready and is drilling a water well, which is now down about 200 feet, and at last report had reached a sand bearing a sulphur salt water in small quantity, which is considered as good indication of oil bearing sand. The Trissleman well found oil and a heavy flow of gas at 600 feet, and the Co-Operative will probably strike the same sand, but is intending to drill still deeper in hopes of getting a stronger flow of lighter oil.

Much interest is being centered around the Edna and Pismo fields in San Luis Obispo county, and from indications the prospects along these creeks are becoming very promising. At present two companies are at work there, the Dudley Brothers and the East Puente Annex Company, both of whom have been largely identified with development in the Lost Hills and McKittrick districts. Other parties have secured locations and several drill sites have been marked off. The Dudleys have 300 acres near Edna on which three old wells are being pumped and are making from 275 to 300 barrels a day. The formation is favorable for easy drilling and the oil sand varies from 1000 to 1400 feet, with a 15 degree oil.

Reports from the country west of the Carrizo plain are to the effect that many quiet inquiries are being made for property, and in one instance a group of eastern capitalists made a flat cash offer of $50,000 for land that has been held as cattle range and was formerly on the market at $7.50 an acre. This offer has been refused and higher figures have failed to secure land. It is reported that $400 an acre has been offered by one of the large companies for a small parcel lying along the Santa Maria river, south of Shandon.

EXPECT $3 OIL IN PENNSYLVANIA

An advance of 10 cents a barrel in the price of Pennsylvania crude oil recently marks the third advance of that amount since September 27, last, and brings the price back to the high point of the year, $2.60. All indications point to further advances in the price of Pennsylvania oil and the expectation is that $3 oil will be seen soon. The increased price is a result of the heavy demand for high-grade oil to meet the gasoline demand.

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UNION OIL COMPANY'S GROWTH

When the Union Oil Company organized in 1890, the industry was in its early infancy and any venture in the petroleum business was considered as strictly speculative. The growth of the business of the company since that date is evidence of abiding faith on part of the men who put the company forward and of the further fact that until a territory is prospected properly there is no absolute means of knowing whether or no oil is to be discovered.

The Union Oil Company now is capitalized at $50,000,000, with an issue of $34,092,200. It owns five refining plants, situated at San Luis Obispo, Oleum, Maltha, Santa Paula and Brea. The combined capacity of these plants is 45,800 barrels of crude oil a day. In addition to this the company owns a gas compressor plant at Orcutt, which has a capacity of 8,000,000 cubic feet a day.

There are 730 miles of trunk and gathering pipe lines with a daily capacity of 100,000 barrels. These pipe lines are valued at $9,900,000, including the storage system connected with them. There are 19 sea-going and inland vessels belonging to the company with a capacity of 870,000 barrels and 115 tank cars holding 30,000 barrels. There are 108 distributing stations.

The company now has 317 operating wells, with a daily production of 25,000 barrels, and in addition to this there are 31 wells under active development. The value of the products of the company for the first nine months of 1916 amounted to $6,500,000, and this export business had a range covering practically the entire work. There is a total storage capacity for crude oil of 16,400,000 barrels.

Employes to the number of 3,150 draw a payroll annually of $3,000,000.

IN THE McKITTRICK FIELD

Throughout the oil fields of California there are none with more evidences of activity than the McKittrick west side, North McKittrick, Lost Hills, Midway, Belridge and Sunset districts, in all of which places new rigs are being constructed and new wells in process of drilling.

New ventures and leasing in tracts regarded as "promising" are numerous, and considerable wildcatting is adding interest to the extent that there is good demand for land, especially toward the west.

Carloads of pipe for distribution throughout the McKittrick district are arriving steadily.

The recent purchase by the Standard Oil Co. of an entire section, 16, 30-22, beginning at the outskirts of the city of McKittrick from A. B. Spreckels and wife of San Francisco, has had the effect of brightening greatly the hopes of all interested in the future of North McKittrick front, portending, as is believed, the development on a most extensive scale of this territory. The entrance of the Standard in the comparatively new field, where several hundred acres were taken over some months ago, and on which oil has been found and timber for a number of rigs is ready for use, is viewed with little satisfaction, inasmuch as the results so far obtained by this corporation in development is of a character that must be gratifying to the stockholders. The Standard, being one of the leaders, it follows that other concerns will appear in its wake.

Eight miles northeast of McKittrick is a group of wells, operated by several companies and here and there have been notable successes in exploration. First, is a well on the lease of the H. S. Williams Oil Co., in section 26, 29-21, was brought in with a production of 150 barrels per day. Then the Pacific Crude Oil Co. on the same section was rewarded with a well producing 90 barrels daily. The H. S. Williams Co. landed another well, which yielded 100 barrels every 24 hours. And all these within a few days of each other during the past two weeks. Both companies are getting ready to put up more rigs, and meanwhile several concerns in the immediate vicinity are drilling in the hope of making a similar strike.

The Lost Hills district is exceedingly active. There is a seemingly well authenticated rumor that the Dudley and Dudley Oil Co. intends to sink 30 new wells in section 9, 27-21, where petroleum of from 25 to 38 gravity, the highest grade yet found in the Lost Hills field, has been secured. This company is drilling more than 1000 feet in depth, and on section 11, 27-21, one in which the drill is down over 850 feet. Rigging up is being done on section 5, 27-21, and also on section 9, 27-21. The Dudley and Dudley Co. is reported to be preparing to drill more wells in the Edna district, a few miles from Pismo Beach, in San Luis Obispo county.

On section 26, 27-20, in the North Belridge field, the Belridge Oil Co. will drill well No. 12, and will drill No. 21 in section 33, 28-21, at the main camp, located 14 miles northwest of McKittrick. In the North Belridge district tests of water shutoff are being made by the Reward Oil Co. in section 34, 27-20; the General Petroleum Co. in section 3, 29-21; the Standard Oil Co. in section 34, 27-20. Similar work is being done in the Lost Hills field by the Associated Oil Co. in section 13, 26-20.

Work of redrilling or deepening wells in the Lost Hills field included one or more on the following properties; B. B. and E. R. Dudley Petroleum, in section 13, 26-20; section 3, 26-20; California Star Oil Co., in section 24, 26-20; and the Enos Oil Co., section 6, 26-20. The Kern Four Oil Co. is to deepen well No. 1, in section 4, 27-28, in the Belridge field. In the Midway district, a new well is to be drilled by the Midway Peerless Oil Co., in section 15, 31-21.

The Reward Oil Co.'s well No. 42 has been cemented The drilling in the well has been done by motor power, and when resumed prompt work will be continued until it has been completed.

The Berry & Keller Oil Co. is down more than 300 feet in well No. 16 on its lease in the McKittrick field. Work of building the rig for well No. 17 will be finished in a short time. The drilling of No. 17 is to be followed soon afterward by two more new wells.

The second well of the Standard Oil Co. on section 8, 30-22, will soon be spudded in. This well is located a short distance northeast of the Standard's station at Olig, three miles north of McKittrick.

The East Puente Oil Co. has drilled to a depth of 300 feet in the new well sunk on the property taken over from the Tiber Oil Co. and located four miles from Pismo Beach.

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Vol. X SAN FRANCISCO, DECEMBER, 1916 No. 4

Adequate Acreage And Oil Conservation

(Address delivered by Max W. Ball, U. S. Bureau of Mines, at 19th Annual Convention of American Mining Congress.)

It is not necessary, before this Congress, to emphasize the necessity for careful conservation of our oil and gas supply. By January 1, it has been estimated, there will be 3,000,000 automobiles in use in the United States. More and more the American merchant depends on gasoline to deliver his goods; the American farmer to pump his water, plow his fields, and carry himself and his crops to town. Fords multiply and cover the earth. Very likely petroleum takes you to the office in the morning and takes you home at night. If it does not furnish the power it lubricates the bearings. In the evening it takes you and your family for a spin along streets lighted by natural gas or gas made from petroleum. It heals the burn you got from the engine, cures the baby's croup, and furnishes the family with chewing gum. Mr. Northrop, of the Geological Survey, has pointed out that every American industry is dependent in greater or less measure on petroleum or natural gas; and indeed can you imagine modern life without gasoline, kerosene, vaseline, fuel oil, or lubricants?

Should it become necessary to defend our American life and American ideals against a foreign foe, the first line of defense will be dependent on oil for fuel. All of the modern war-craft are being built to burn oil exclusively. I recently heard a naval officer say, "Yes, oil is more expensive than coal, but so is smokeless powder more expensive than black, and we might as well return to one as the other."

Limited Supply

How great is our supply of these substances on which our daily life so much depends? An estimate furnished Congress by the Secretary of the Interior, early in the present year, based on the most complete data in possession of the Government, gives the amount of oil remaining in the ground as perhaps 7,704,000,000 barrels. Independent estimates made about the same time by Ralph Arnold and Mark L. Requa do not differ widely from this. The figures at first glance seem enormous, but they represent less than 29 years' production at last year's rate.

This does not, of course, mean that in 29 years our oil fields will be exhausted. As exhaustion approaches, production will be slower and slower. Oil from Latin-American fields is already entering our markets. As soon as prices warrant, the great oil-shale deposits of Colorado, Utah and Wyoming will be made to yield petroleum and its products. Thus there is little danger that by 1945 the oil fields of the United States will have been exhausted and abandoned, but there is grave danger that by 1945, and in fact long before, we will be paying the increased price consequent upon increased cost of production from depleted fields, transportation from foreign countries, and mining and treating deposits from which the oil must be distilled.

Necessity for Conservation

It is evident that here is a resource the use of which is rapidly increasing the dependence upon which is well-night universal, and the readily available supply of which is limited. There could be no situation calling more clearly for prevention of waste, economical production, and careful use—principles of wise development and proper utilization which we comprehend by the word "conservation." If the American people have need to practice conservation with regard to natural resource, it is with regard to their supplies of oil and natural gas.

Enormous Quantities Wasted.

Are we practicing this conservation? Within the last few weeks I have seen millions of cubic feet of natural gas wasting into the air—gas so rich in gasoline that it dripped from the trees like an April shower. I have seen wells capable of yielding 40,000,000 cubic feet of gas being deliberately drowned out by pumping water into the gas sands. Reckless drilling, defective casing, careless plugging are flooding great areas with water and losing forever enormous quantities of oil. It has been testified before the Corporation Commission of Oklahoma that ordinary methods leave from 25 to 85 per cent of oil in the ground, and this estimate is concurred in by careful engineers and practical oil men.* Think of it! Twenty-five to eight-five per cent of this valuable resource left underground, chiefly through ignorant, careless, wasteful methods.

Nor are these underground losses the only ones. When the oil is brought to the surface before transportation and market are ready for it, it must go into storage. Indeed, in many fields oil has been produced before storage was available and millions of gallons have gone

down the streams or seeped away from earthen reservoirs. Even when the best steel tankage has been provided evaporation losses still go on. Cushing crude stored in steel tanks for a few months lost approximately a fifth of its gasoline content. The State Mineralogist's office of California has estimated that even with the heavy oils of that State the loss by evaporation represents perhaps 25 per cent of the total value of the production at the well. An official of one of the largest companies in the Midcontinent field recently told me that last year fire destroyed 6 per cent of his company's production.

Just consider these examples: 25 to 85 per cent left underground; 20 to 25 per cent of the value of oil produced lost through evaporation in storage; 6 per cent of stored oil lost by fire! These losses are staggering and are not exceptional! What a small percentage of this wonderful natural resource is saved to run your machine or to deliver goods at your door, or to plow the fields from which your food must come!

Forms and Proximate Causes of Waste.

If we feel these losses in the high prices of the present day, how much more will we feel them five, ten, twenty or thirty years from now? Is it not time we considered them seriously and tried to determine upon some remedy? Suppose we begin by studying in a little more detail the nature and forms of waste and the proximate causes.

Hasty Drilling and Production Methods.

What is the usual history of an oil field? Someone drills a wild-cat well and discovers oil. Immediately a horde of companies and individuals rush in, leasing every tract in the neighborhood of the discovery. Conservatism, competition for leases, and a general public sentiment against large holdings result in the fields being cut up into small tracts. Then everybody starts to drill at once, as fast as he can. Smith knows that unless he reaches the oil sand before Brown, who is drilling just across the line, Brown will draw some of the oil from under his land. On the other three sides Jones, Snider and Standard Oil, each drilling as many wells as he can get tools for, and Smith must race them all, well for well. If he doesn't he might as well quit and throw up his lease, for they will have his oil.

Half way to the oil sand he encounters large quantities of gas. Just at present there is no available market for gas. Two years from now it may have a high commercial value; two months from now he may be paying a big price for enough to run his lease; but at present this great natural gas deposit is of no particular use to him. He is after the oil and he must get it as soon as possible. Perhaps to case off the gas properly would require a few days' time. It would be simplicity itself to seal the sand by the use of mud-laden fluid, but in his haste he has not provided himself with a pressure pump, and he can't stop now. So the gas is bradenheaded, allowed access to a few hundred feet of uncased hole, and in a little while has dissipated itself and been lost to human use, not only so far as Smith's well is concerned, but probably also in all the surrounding wells of the field.

Five hundred feet deeper Smith drills through a water sand. Here again a little mud properly applied would make everything safe, but that pressure pump is still lacking, and Smith hurriedly sets a string of casing and drills on.

At last he drills into the oil sand, about two screws ahead of Brown, Jones, Snider and the Standard, and finds that the oil is accompanied by gas at high pressure. Now Smith is no ignoramus. He has studied the habits of oil and gas wells. He knows that it is the gas which drives the oil from the sand into his well and forces it to the surface. He knows that if allowed to flow without restriction the gas will exhaust first, leaving much of the oil in the sand. He knows that by restricting the flow he can considerably increase the total flush production of oil. This is the course he would like to follow, but he knows that if he restricts the flow of his wells Jones and the rest will allow theirs to flow unrestrained and he will be drained of some of the oil that is rightfully his. Brown, Jones, Snider and the Standard each looks at it the same way, and as a result the wells of the field flow wide open, the gas pressure in the oil sand is soon exhausted, and the recovery of the remaining becomes an increasingly difficult and expensive, if not impossible operation.

About this time the wells of the field begin to make water with the oil. Jones is sure that Smith's hasty setting of the water string was defective, and that water has leaked through to enter the oil sand. Smith is equally sure that the leakage is in Brown's or Jones' well, and Brown is certain that Snider or the Standard is guilty. The chances are that each of them is right, but the great outstanding fact is that the field has been ruined, and that the public has been permanently deprived of thousands of barrels of its oil.

Demoralization of Market.

So much for the drilling side of it.* Let us turn to another side It is fair to assume, based on the history of the industry, that when the first well is brought in in this field the market is already fairly well supplied with oil. A market for the oil of the new field must, then, be found or created, and this is a task which, if the general oil market is not to be demoralized, must be accomplished slowly. The new field should, therefore, be brought in gradually, a well at a time, as the market is built up for it, the oil being left in the ground until it is needed. The necessary pipe-line facilities would be installed in advance of any great production, little storage would be required, the operator would receive a fair price for his oil, and the drilling wastes already cited would be reduced to a minimum.

Is this the way it works out in general practice? Not much! Smith has only a small lease. He must produce his oil as quickly as possible or lose it. Brown, Jones, the Standard, and the hundred and one other operators in the field are in the same fix. Everybody gets his oil out as fast as he can. He has to. As a result, the maximum production of the field is thrown on the market practically all at once. If the field is an extensive one the result can only be a demoralization of the market, with inadequate prices to the operators not only in this field, but throughout the region and perhaps throughout the country.

Premature Abandonment of Small Wells

At first thought this lowering of prices would appear to be a good thing from the consumer's standpoint, but let us look a little further. All over the older fields are hundreds of wells which once were big producers, but which have now dropped down near the lower limit of profitable production. One of these wells will produce but a small amount daily, but its aggregate future production, if properly handled, may run into thousands of barrels. The total production from this class of wells is large, but if the price of oil drops the margin of profit in their operation is wiped out and the wells abandoned.

In most cases the abandonment is permanent, the wells are ruined, and the oil remaining in the ground is no longer available except at prohibitive cost.

Inferior Uses of Oil.

Let us consider another effect of lowered prices. There are many uses for which coal and oil are equally adapted. The supply of coal in the United States is immensely greater than that of oil. To burn oil for a purpose for which coal is equally adapted is an economic waste. Yet that is what is done whenever the price of oil falls so low that it is cheaper for these inferior uses than coal. And this is not the worst of it. When the price of oil falls abnormally low as it did a year and a half ago, vast quantities of crude oil are burned as fuel without separating out the gasoline, kerosene, and other lighter constituents. Think of it! Buring oil under boilers without taking out the gasoline. Yet whenever prices are so low that it is cheaper to burn the crude than to refine it, the crude will be burned and the gasoline lost. Thus in the long run the result of these lowered prices is to increase the average price of oil and its products.

Storage Losses and Storage Charges

Nor is the demoralization of prices the only result of suddenly throwing the maximum production of a field onto the market. Perhaps when the discovery well is brought in the pipe-line facilities of the field are inadequate; perhaps there are none at all. Can our friend Smith wait until transportation becomes available, leaving his oil in the sand, the storage nature provided for it? If he does he stands a chance of never getting it, for his neighbors will have it. No, he has no alternative. If he wants his oil he must bring it to the surface and store it as best he may until he can sell or transport it. If he sells, the purchaser probably stores, waiting for a market and the inevitable raise in price. Thus most of the field's maximum production goes into storage—steel tanks if they are available, earthen reservoirs if nothing better can be had—down the creek in too many cases. I have already pointed out what this waste means under even the most favorable circumstances; how Cushing crude lost approximately a fifth of its gasoline in steel storage; how California is estimated to lose a fourth the volume of oil through evaporation; how one large company lost 6 per cent of its stored oil from lightning. And there is another angle to this matter of storage. It costs almost as much to store oil in steel tanks for a considerable period as it does to obtain the oil in the first place. Think that over for a moment, and figure out who pays that storage charge. You know that neither the producer, nor the pipe-line company, nor the refiner, nor the jobber, pays it, but that it falls on you and me and the rest of the consumers.

Unnecessary Wells.

While we are talking of charges against the industry, let us consider another and very heavy charge. We have supposed that Smith owned a small acreage, and he is a man of keenness and foresight. Studying the character of the oil, the porosity and dip of the sand, and the gas pressure, he concludes that three wells, properly placed, will obtain all the recoverable oil from his lease. He knows also that a dozen wells will drain the tract far more quickly, though at four times the expense. He would like to produce his oil in the economical, careful way, but across one line is Jones, across the other Brown, and to north and south are Snider and the Standard Oil Company. Each has considered the same problem, each has competitors on every side, each is drilling as many wells as he can as fast as he is able. Smith doesn't consider long. He gets a dozen strings of tools dropping as soon as his finances let him. Of course the oil costs four times what it should, but so does everyone else's oil in the field, the general price is correspondingly high, and whoever buys the oil pays the extra expense.

Do not think this is an overdrawn picture, or that the item is a small one. Just have a look at this diagram of the famous Glenn Pool of Oklahoma, taken from hearings before the Senate Committee on Public Lands, January 12, 1915. It shows that the total cost of drilling in the Glenn Pool was $11,250,000, and estimates that all the oil could have been obtained for $3,177,000; a useless expenditure of $8,073,000. Is that a negligible item? Is that the way the public's necessities should be produced? Eight million out of eleven millions expended uselessly! Three hundred and fifty-four per cent of what it should have cost! And who do you suppose paid the extra 354 per cent? Do you think for a minute that the companies that drilled those extra wells paid for them in the long run? Of course not! Those wells were paid for by a man with a machine, or a gasoline pump, or a farm tractor, by the laborer whose home is lighted by kerosene.

Fundamental Cause of These Losses.

These are some of the ways in which oil and gas are being wasted, some of the reasons why petroleum products are high in price. Let us see if we can discover in them some fundamental cause, some condition that may be remedied.

The first thought that suggests itself is that the operators must be grossly ignorant or grossly careless. Perhaps this is in a measure true. Smith should have had a pump and a slush-pit ready to mud off the gas and water sands he encountered. But does this go to the root of the matter? Why was Smith in such haste to start that he had neglected these precautions? Why wouldn't he wait for the equipment when he found he needed it? Because he feared his neighbors would drain his oil. Yes, and why was this an ever-present, driving fear? Because he held only a small tract. There we have it, gentlemen! There is the root of the whole trouble—the small holding. Let us go back over the history of the field.

We saw that as soon as the field was discovered it was leased up in small tracts. Then we saw the Smiths, the Browns, the Joneses and the Standard Oil drilling for dear life, each trying to get the oil from under his little tract and a bit of the other fellow's before the other fellow could get it. Why? Because each tract was so small that it could be drained by wells on the surrounding tracts.

We saw that the race was so keen that wells were improperly drilled, that gas was allowed to waste into the air or dissipate itself through barren formations, that water was allowed to enter the oil sands, and that great quantities of oil were left underground never to be recovered. Why? Because the small holding forced each man to race with his neighbor.

We saw the entire flush production of the field thrown on the market at once, demoralizing market prices, forcing the premature abandonment of wells in other fields, resulting in the burning of unrefined crude and the waste of the more valuable products. We saw the maximum production of the field go into storage, where the losses from evaporation and fire were enormous, and where the cost of the oil was nearly doubled. What

caused these things? The fact that every holder of a small lease must drill it up as soon as possible.

Lastly, we saw the cost of production more than 300 per cent what it should have been. And what was the reason? That every man must drill his lines as fast as might be, and must completely drill up his land at the earliest moment. Why? Because the oil under his small holding could be taken from him by the wells on surrounding tracts.

Ignorance there may be, carelessness there undoubtedly is, but lack of ignorance, of carelessness, or reckless, headlong methods is the real cause—the fact that the average holding is so small that speed is the owner's sole protection. Let him be careful if he can, let him be economical if he can find a way, but careful or careless, reckless or conservative, he must be speedy if he would survive. The small holding is his master.

The Remedy—Adequate Acreage.

Here, then, we have isolated the cause. Have we not at the same time discovered the remedy? If the small holding has brought the wastes and losses of the oil industry, will not adequate acreage cure these evils? Let us go over them again.

If Smith's lease is large enough so that he does not fear draining by Jones or Brown or Snider, he will undoubtedly drill more carefully. When he encounters the high-pressure gas sand he will mud it in, where it can be drawn on at some time in the future when it has a commercial value. He will mud in the water sand also, and none of the wells of the field will be flooded by infiltrating water. When he finds gas in the oil sand he will restrict the flow so that the maximum amount of oil may be brought out by the gas, the life of the well be prolonged, and its yield augmented. Thus the main dangers of waste in the drilling and handling of the wells are eliminated.

If the holdings in the field are of adequate size, Smith will not fear Brown, nor Brown, Jones. The field can therefore be brought in gradually, building up a market for the production as the production is increased. There is no demoralization of market prices, no premature abandonment of wells in other fields, no burning of unrefined crude, no letting of oil go down the creek, no storage of huge quantities, no great evaporation or fire losses, no tankage charges.

Finally, if the holdings are of adequate size, the number of line wells will be reduced to a minimum, and there will be no inside wells drilled from fear of drainage. The drilling cost will be little if any above 100 per cent what it should be, instead of more than 300 per cent.

Do you think these views of the benefits of adequate acreage are too rosy? Not long ago I had the pleasure of visiting first Cushing, a typical small-holding field, and then Augusta, Kansas, the major part of which is held in large blocks. You know the history of Cushing; how it was thrown on the market almost over night, how the bottom dropped out of oil prices, how millions of cubic feet of gas went to waste, how millions of barrels of oil went into storage, and how the production suddenly fell off nearly 70 per cent. At Augusta physical conditions do not differ greatly from those at Cushing. The average wells of each field do about the same. Both have areas of great gas production. Around the outskirts of the Augusta field are small holdings and here Cushing conditions may in time be duplicated. But with these things the resemblance between the two fields ceases. In the large-block part of the Augusta field I saw no gas going to waste, no huge quantities of oil in storage, no feverish drilling activity. I gained an impression of order, of care, of efficiency and business-like methods. And then, to show that the difference is not a matter of locality or State law, I stumbled onto a small holding, a church yard of perhaps ten acres, and there the derricks fairly jostled the tombstones.

I found people in Augusta who complained because, although the oil field has brought the town prosperity, it has brought no such boom as other places have known. A dealer in acreage was very bitter. "It's all because of large holdings," he said. "If this field had been cut into small tracts like Cushing, it would have been and gone long ago." I agreed with him.

Arguments Against Adequate Acreage.

Is it monopolistic?

Failing to get from the Augustans any farsighted arguments against adequate acreage, I have tried to find some for myself. In the first place, large acreage somehow sounds monopolistic. I find that whrever I talk acreage someone holds up his hands and says, "Oh, but that would be creating a monopoly." But would it, now? What is a monopoly? According to Webster it is "the sole power of dealing in any species of goods, or of dealing with a country or market." Giving a man a large instead of a small oil lease certainly doesn't grant him any such "sole power" as that. The New Standard Dictionary gives a similar definition and adds, "especially * * * such control of a special thing, as a commodity, as enables the person or persons exercising it to raise the price of it above its real value, or above the price it would bring under competition." Now it is easy to see how granting a man a lease on all the oil lands in the United States, or in some part of the United States, or of all the oil of a particular grade in a given region might be giving him a monopoly as thus defined, but it is difficult to see how giving him an adequate lease in any given field would bring him within the definition. He could not raise the price above the real value, or above the price the oil would bring under competition, for he would be in direct competition with oil produced from similar leases in other fields, or in the same field if the field were a large one.

Perhaps the idea that adequate acreage tends toward monopoly is based on a belief that each small lease represents the entire holdings of a company or individual in a given field. Of course this is not the case. In the major fields a company holds a tract here, another there, a third yonder, a fourth, fifth and sixth beyond. The trouble is not that the acreage held by one company is too small but that it is broken up into such small units, instead of being in a compact block. If each company operating in Cushing had held all of its acreage in a single unit, the history of the field might have been radically different, with no harrowing tales of waste and losses.

Does It Eliminate the Small Operator?

If we have laid the monopoly ghost, let us turn to another and more real objection to large acreage—that it eliminates the small operator. But does it? To my mind it would tend to eliminate the very small operator, but not the operator of moderate resources. The competition for leases would probably be less of a cutthroat struggle if the leases were larger, and the acreage price would perhaps be less. If so, the operator of moderate resources could swing a larger lease than he can now, particularly in view of the fact that he could handle his lease economically after getting it.

Before we expend any sympathy on the very small operator who might be lost in large-unit operations, suppose we consider his present status. How many of him do you think get a foothold in any field of consequence? Very few indeed. And what happens to those who do? When the field is flooding the market and tankage is high, they cannot afford to buy or lease storage. They must produce their oil; they cannot care for it after it is produced. Talk about your upper and nether millstones!

What do they do? Sell their leases for a song to some big company with plenty of tankage, or, if not forced quite so far, sell their oil to the company at prices that do not cover the cost of drilling the wells. That is the way the small-acreage system encourages the small operator. How many genuine little fellows, for example, got rich in Cushing?

Then there is another angle to this small-operator question. Suppose for the moment that adequate acreage will put him out of business. Can we afford to continue wasteful, careless, extravagant methods for the sake of giving him a job? After all, whose interest is paramount, that of the public or that of the small operator?

Will Regulation Accomplish the Same Results?

There remains one point to be considered: Can the same results be accomplished by some other means? How about laws and regulations against waste? I believe thoroughly in such legislation. In Oklahoma the supervision of Indian lands by the Bureau of Mines and of commercial lands by the Corporation Commission has proved beyond a doubt that proper drilling methods can be enforced and enormous waste prevented under proper laws, but there are certain things which it is hard to reach by administrative regulation; such, for example, as the drilling of too many wells, racing along property lines, premature production, storage losses, and the like.

There is another phase of the regulation matter which to me seems important. It is much easier to regulate a man's business if your regulations run with rather than contrary to his economic interests. When economic necessity goes counter to regulation and statute, the operator can be depended upon to find some way to avoid the regulation and nullify the statute. And whenever it becomes profitable for the operator to prevent waste he can be depended upon to do so without compulsory regulation.

Conclusion.

Hear, then, the conclusion of the whole matter. If you would prevent waste of oil and natural gas, if you would do away with careless drilling methods, excessive production charges and storage losses, if you would insure the production of the maximum amount of oil at the minimum cost, if you would help to maintain a reasonable price for petroleum and its products in the years to come; then do your part in creating a public sentiment in favor of adequate acreage. You may not find it a popular propaganda just now. You will doubtless be accused of advocating monopoly and probably branded as a corporation partisan. But if you take one step toward imbedding the acreage idea in the popular mind, or incorporating it into State legislation, or embodying it in oil-field practice, you will have assisted in conserving the oil and gas deposits of the United States, and will have rendered a valuable public service.

MAKING A FALSE PLEA

Conservationists in the federal government are carrying on an extensive campaign to convince the people that there is danger of the oil supply giving out, says the Los Angeles Petroleum Reporter.

A few years ago it was the general cry that the supply of the United States would give out in a few years, and now the cry in California is that the oil will soon be exhausted.

Since these dire prophesies new oil fields have been opened in Alaska and other parts of the United States that will supply the country for three or four hundred years.

At the same time development of water power and generation of electric current are cutting down the consumption of coal and oil and whole railroad systems are going under hydro-electric power.

With construction of hard surface highways less crude oil will be used. When crude oil goes above a certain price it will not be used for fuel and the demand will be checked from that source.

It is not so many years ago that gasoline was a drug on the market and it went to waste. With constant development of hydro-electric energy (that will never cease in its supply) less oil products will be burned.

The cry that the oil supply will play out in 20 or 30 years is being used to tie up the remaining undeveloped oil fields in the west in the hands of conservationists thru the federal courts.

In spite of the federal prosecutions and shutting down many prospectors and operators, the output of the California oil wells has increased from 250,000 barrels a day in January, 1915 to 260,000 barrels a day in September, 1916.

Secretary Lane shows in Senate Doc. 310 that according to the U. S. geological survey the per centage of exhaustion in all oil wells is 26 and the estimate is 2345 million barrels, or at present rate of production good for 300 years.

The best engineering authorities, instead of an oil famine, predict that owing to the rapid development of electric energy from the world's water powers oil and gas fuel products are bound to be cheaper rather than dearer.

Secretary Daniels at the hearing before the Senate during February, 1916, showed that oil consumption by the navy increased from 137,000 barrels in 1911 to 600,000 barrels in 1916. Estimated consumption with enlarged navy by adding 9 battleships and 17 destroyers, was put at 1,760, barrels and in time of war at 5,000,000 barrels.

The government already has undisputed title to Naval Reserve No. 1 in California, which at the same hearing was shown by officials of the U. S. Geological Survey to hold 100,000,000 barrels, a supply adequate for 50 years for the national navy.

GASOLINE POWER ON THE FARM

Fast as is the increase of automobiles in California, equally fast is the growth of the use of gasoline power on the farm. Realizing this, the University of California has invited the farmers of the state to come to the University Farm at Davis, from November 13 to 24 for practice training in the care, use and repairing of gasoline tractors. Members of the faculty of the division of agricultural engineering of the University will give lectures and practical demonstrations and there will be ample opportunity for practical experience. Those intending to attend should write the University Farm at Davis by the end of October.

California Derrick

The Oil Authority of the Pacific Coast

PUBLISHED MONTHLY
—BY—
The California Derrick Publishing Company
DR. CLARENCE E. EDWORDS .....Editor
E. L. MACKEY ..... Business Manager

OFFICES
509 Sansome Street, San Francisco, California
Telephone Sutter 2984
Editorial Rooms 417 Montgomery St., Room 422
Telephone Douglas 3617

Subscription price, per year, $2.00 **Foreign $2.25**
Advertising Rates on Application
Entered as second-class matter February 17, 1912, at the postoffice at San Francisco, Cal., under the Act of March 3, 1879.

THE DERRICK'S CREED

The California Derrick has no axe to grind, no company to promote, no stocks to sell, no "interests" to bow to. Not dominated by any company, but faithful to California's Oil Industry.

PINAL DOME AGAIN PAYS

The Pinal Dome Oil Company, which has not been on a paying basis for a year, has issued its second dividend, amounting to a quarter of a cent a share, or $9,000 in all.

WILL MAKE BIG EARNING

The California Petroleum Corporation will earn 8 per cent this year on preferred stock, after allowing full usual depreciation. This rate was practically assured by the income for October. Indications point to earnings of about $1,500,000 for 1917.

FUEL OIL FROM PEAT

At a recent conference of the British Association in Newcastle-upon-Tyne Prof. Boulton in delivering his presidential address in the geological section discussed the geology of petroleum and described a process for the extraction of fuel oil from peat, which had been tried experimentally in London, and is now about to be launched on a commercial scale, using peat deposits like those of Lanarkshire and Yorkshire. From a ton of Lanarkshire peat, after the moisture had been reduced to 25 per cent, 40 gallons of crude oil, 18 pounds to 20 pounds of ammonium sulphate, about the same quantity of paraffin wax, 30 p. c. to 33 p. c. of coke and 5000 to 6000 cubic feet of combustible gas were obtained. The coke was said to be of very good quality.

OIL FUEL IN THE NAVY

Nevada State Journal.—The fact that the seventy vessels to be constructed under the new naval appropriation law are to be oil or gasoline burners shows how rapidly oil is supplanting coal as fuel for the steamships of many nations.

The navy department estimates these vessels will consume 116,000 barrels of fuel oil a day when fully operated, an enormous amount. But the United States is in an extremely enviable position to construct oil burners as it controls 60 per cent of the oil production of the world.

Great Britain has enormous supplies from the oil fields in Mexico. The Mexican Petroleum Company, according to the *Wall Street Journal,* and the Mexican Eagle Company, controlled by English interests, will furnish sufficient oil for British battle and merchants ships for many years to come.

As three barrels of oil are equivalent to about a ton of coal, price advantages are all on the side of oil. Owing to greater speed in loading, it is estimated a merchant ship, fitted with oil burning apparatus, can save a day in port and this is an important item in the expense of running a merchant marine.

Because of this lowering of cost ships, now building, are being made oil burners and vessels now in use are making arrangements to change from coal to oil as soon as they are relieved from war duty.

Another important improvement that follows in the wake of installing oil burners is the elimination of the terrible hardships to which stokers are exposed while feeding the enormous furnaces with coal, particularly when forced draft is demanded.

COST OF RITTMAN PROCESS TOO HIGH

The report of L. C. Reed, the expert sent by the Independent Oil Producers Agency to Pittsburg to observe the results obtained by the Rittman Process Company in converting a carload of Kern River Crude oil of fourteen gravity into gasoline, has not been made public, and it is not expected it will be. However, it is known that the report is not favorable to the immediate erection by the Agency of a Rittman plant in California, but it is believed to be favorable as to the future possibilities of the process in cracking California oils, when it shall have been further developed.

From what can be learned Mr. Reed's report may be summarized as follows: That the Rittman process is entirely successful in producing large quantities of excellet gasoline from California oil, but until a number of mechanical difficulties are solved the cost will be prohibitive. The difficulty of disposing of the carbon is said to be one of the greatest encountered.

PETROLEUM EXPORTS

The figures for the exports of petroleum and its products for September have just been issued by the Department of Commerce. The total for the month was 264,081,965 gallons, a gain of nearly 50,000,000 gallons over the previous September . There was a larger export of all grades than a year ago, but the largest is found in the increase of 17,000,000 gallons of gasoline and naphtha.

The value of the September exports was $20,834,186, a gain of $8,500,000 over that for the corresponding month of 1915. Naturally gasoline made the best showing, with an increase of nearly $5,300,000, but illuminating oil was also in better demand and $5,000,000 over the figures for September of last year.

For the nine months ending September the quantity exported was 1,943,577,170 gallons, having a value of $153,739,332. The increase over the nine months' period of last year was 210,000,000 gallons and $18,500,000 respectively, in round numbers.

If this ratio is maintained for the last three months, the exports of petroleum will exceed two and a half billion gallons, and the value will amount nearly to $200,000,000, making a new high record.

Oil at Mining Congress

The Oil and Gas section of the American Mining Congress, convened on Tuesday, November 14, with Judge Short presiding.

In a paper on "The Authority of the State to Tax Mining Property on Indian Lands," Judge J. G. Gamble of Des Moines, Iowa, reviewed with some detail the various decisions in which it was established that instruments of the general Government are immune from taxation by the several states. Mining and oil leases on Indian lands are made by the Government under the Curtis Act, royalties, etc., all going to the Indian or rather to the fund held by the Government for its wards. Thus it was also held in another famous case that an attempt on the part of the State of Minnesota to tax securities owned by its citizens, but issued by a municipality situated in Indian country which in time gained its powers to issue the securities from the Federal Government, is void. From this point Judge Gamble shows that the Government in its administration of Indian Lands has vastly increased the amounts set apart for general service, maintenance and supervisory purposes. In this respect the officials do not differ from those of American municipalities. And finally Judge Gamble proposes what he believes is a decided improvement on methods of taxation. He believes there should be created in each taxing district a board consisting of taxpayers to whom the administrative officials should submit an estimate of their requirements of funds for the ensuing year, together with a financial statement showing among other things, the resources of the municipality other than from taxation, and if such board was invested with authority to review such an estimate and reduce the same, and not increase it, as their judgment might dictate, and thereupon was empowered to lay the taxes necessary to meet the estimated requirements as approved by it, it would seem to him that there would be an added assurance to the tax payer that he would be subjected to no such extravagant expenditures as is possible in certain communities now.

In a paper on "The Relation of the Federal Government to Western Oil Production," Governor James N. Gillett reviewed the oil situation as it affected the public lands in the west. As early as 1909 the conclusion was reached that something ought to be done by the national government to conserve the oil resources of the country, and to keep such a control over those resources that there might be prevented monopoly and waste and an over production. He discussed the various withdrawals covering oil lands and as to what disposition was to be made of them by the government.

The paper created considerable interest and brought forth extended discussion by delegates and members, including J. C. McDowell, Judge Short, Louis Titus, Dr. Norman Bridge, and Max W. Ball.

At the conclusion of the paper the following resolution was read and adopted.

Be it resolved, That this Congress is deeply interested in the just operation of the mining laws. As a result of certain orders of withdrawal by the President and legislation by Congress, many persons, who at great expense, and, as adjudged by the courts, in good faith have developed the oil lands of the country, are threatened with ejectment and forfeiture of their developed lands and their investments, in all such cases we urgently urge prompt and appropriate relief legislation so that those who have in good faith developed such lands shall be protected and shall receive prompt and appropriate relief.

On Wednesday, Nov. 15, Dr. Rittman in his paper, "Through the Use of Petroleum," showed that the annual consumption of dyes in America is, roughly, from 100,000 to 125,000 tons.

Of this total amount 90 per cent is made up of two colors. Sixty per cent of all the colors used in this country are black, 30 per cent blue, and the numerous other colors are in the remaining 10 per cent.

We hear all kinds of opinions and estimates regarding the importance of this dye industry, some believing that the very foundations of the making depend upon it, others again believe now that in terms of dollars and cents it is no more important than Woolworth's candy item a year. True, it doesn't amount to more than Woolworth's candy item, but it is wrong to consider it in that light.

The importance of the dye industry is more in its relation to other industries, such as the leather industry, the textile industry, and more particularly the explosive industry. The world has learned from a military point of view that Germany's wonderful dye industry was in reality an explosive industry.

It is very natural that these two industries should run hand in hand, because they use identically the same materials to start with, and the processes of manufacture are practically the same up to the very end.

Therefore, we have the close relation between these two industries, first, because they use the same materials, second, because they are manufactured by the same process. The same equipment that makes the dye materials makes the explosives, and it is a matter of a week or two to convert a plant from one into the other.

In concluding his paper Dr. Rittman held that there is no fundamental division scientifically between coal, lignite, peat, shale, oil, gas. It is a question of volatile matter or a question of hydrogen relative content, because hard coal is the one extreme, methane is the other extreme. Twenty-five per cent of the methane is hydrogen; practically none of the coke is hydrogen. None of the hard coal is volatile, or all of the methane is volatile. It is a case of getting a blend between, that is, on the extreme substances. Is it possible to make one into the other? Not at all. Nature has simply done the same, but scientifically the mere possibility has conceived the possibility in very many cases. So it resolves itself into a natural workng out by a study of the laws of physics and chemistry, a study of the laws of nature, and working in sympathy and harmony with those laws.

"Geology In Its Relation to the Oil Industry", was the subject of a paper prepared by J. C. McDowell of Pittsburgh. A summary of the paper follows:

Oil and gas are found in practically every formation porous enough to contain it through the entire geologic series. But profitable commercial deposits are found only when the formation containing them is enclosed within an impervious strata of rock or shale, usually the latter. It is for this reason that the anticlinal theory first promulgated by Dr. I. C. White about 1880 has been gathering strength in late years. Dr. White discovered that the production was generally found associated with anticlines or earth folds, gas being in the upper part of the anticline; oil, the next heavier, below the gas, and beneath the oil, the salt water.

Perhaps it might better be said that in recent studies the application of the anticlinal theory has been more fully developed, and accumulations are found in places where the theory apparently does not hold, but upon further

study a trap or some condition similar to that produced by anticline is found to be present.

Very few, if any companies, however, applied geology greatly to wild-catting work.

In fact as each producing section of the country appears to offer its own peculiar problems of relationship of deposit structure,, it is practically necessary to study each field by itself; but the more this is done the more apparent becomes the fundamental uniformity along certain geological lines.

Probably the most successful application of geology to gas and oil production is that of the last few years in the Mid-Continent field in Kansas and Oklahoma. It is safe to say that during 1915-16 several million acres of land have been leased on this trend, and strange to say not only has Kansas acreage been brought back into demand after years of absolute condemnation as worthless for oil and gas purposes, by practically all of the larger producers, but record prices for undeveloped leases are now being paid in that territory. This condition has been brought about by discoveries made along a strictly scientific basis and by men who had faith in the correctness of the anticlinal theory.

By this work were opened three prolific oil and gas pools now among those attracting the attention of the entire oil fraternity—the Augusta pool, the North Augusta pool and the Eldorado pool, all of Butler county, Kan., which represent a good individual example of geology applied to the oil industry. After several years of unsuccessful attempt to open the Augusta gas pool along the customary practical lines, and this field abandoned several times as small, spotted, and, of no great consequence, methods of geological disclosures were attempted which were very successful from their earliest application in 1913 until today. The earliest attempts were made by taking the level or altitude at the mouth of each of the wells drilled, whether productive of gas or oil, and platting an arch representing the top of the gas-bearing sandstone stratum from the well logs or drilling records, taking the cross section at several points and indicating the true axis of the anticlinal dome, and thereby under a short period of time the field was extended several miles in length by actually producing wells.

Later a carefully prepared planed table survey of the structure was made, using the Fort Riley limestone outcropping at the surface as a base or datum or which to plot structural contours, thus disclosing a dome or trap extending in an irregular shape for seven miles in length and two and a half in greatest width.

It was very apparent that with careful geologic study upon the sound lines, that practically all of the main productive fields of Kansas and Oklahoma could have been forecasted and opened strictly upon geological evidence.

In general it must not be understood that such forecasting is a simple matter, for it is not. At best there are many chances of failure, even after a possible trap is disclosed upon the surface of the ground Not only is there a danger of the trap flattening before porous strata are reached, but there may be no porous strata underneath. Again there may be, but filled with salt water: again they may be some denser impervious area intervening on the slope preventing the oil and gas from collecting in the dome or trap, and last there may be no gas or oil in any part of the formations tapped.

Only patient, careful thought and study can avail.

R. L. Welch had for the title of his paper "Practical Phases of the Standard Oil Dissolution, and the Necessity of Combinations Among Independent Producers to Meet Unfair Competition."

A paper on "Oil Storage" prepared by Garrett B. James of Chicago claimed that the two main points to be considered in the storage of petroleum are evaporation and fire hazard.

The loss of the lighter or more volatile constituents of the oil lowers its value to more or less marked extent. Evaporation from loose top steel tanks has been as much as 2,000 to 2,500 bbls. in 5 months. Evaporation from steel tanks with gas-tight steel roofs has been comparatively low for the same period. The saving by the later method would probably cover the additional cost in construction of the tight roof in less than 2 years.

The most effective means known of reducing the fire hazard of oil in steel storage would be the equipment of all-steel tanks with gas-tight steel roofs, properly vented so as to eliminate any possibility of back-firing tanks to be electrically grounded.

As a thoroughly-grounded gas-tank of metal is safe from damage by lightning and will also reduce evaporation losses to a marked extent, this is considered the best form for oil storage.

In his paper on "Remedial Legislation for the Benefit of Oil Companies," Roy N. Bishop, president of the Oil Industry Association of California, summarizes the situation as follows:

Under the Act of Congress passed Feb. 11, 1897, entries upon and patents for oil lands can be made under the provisions of the laws relating to placer mineral claims. It was found that the law was a misfit even in the opinion of the Secretary of the Interior and could not be properly applied to the prospecting and developing of petroleum lands; but acting under the assumption that the government would do no wilful injustice where actual prospecting was in progress many valuable pieces of land were entered upon by men who expended, in many instances, their entire fortunes. New oil fields were discovered, splendid properties were developed and a great industry given to California and the Nation through the courage, optimism and pluck of these men. The development of one oil field encouraged men to further penetrate the mountains and look for others. In the summer of 1909 they were in the midst of this work when in September 3,041,000 acres in California and Wyoming were withdrawn from entry. A divided Supreme Court declared the withdrawal legal.

Ever since the withdrawal the conditions in the oil fields of California have been chaotic. No new work is being done, great losses are being suffered and bankruptcy faces many who but a few years before went upon government land in the best of faith.

What is going to be done for these men? What relief should Congress give them in the oil-leasing bill now pending in the Senate? Secretary Lane in his report for 1915 says Congress should prevent "an unnecessary injustice to those who have invested many millions of dollars under a mistake as to the law." The House has recognized the equities. The Senate Public Lands Committee favors a like provision. Now comes opposition to the relief provisions of the bill from Gifford Pinchot and a few other ultra conservationists, based upon the cry of "wilful trespassers and looters of the public domain." Two federal judges have dealt with this assertion. Judge Bean in the case of the United States versus the Midway Northern Oil Co. says: "The defenders were not wilful trespassers but relied upon the law and were honest in their belief that they were within their rights." Judge Bledsoe's decision in the case against G. W. McCutcheon is just as emphatic in his statement.

"Adequate Acreage and Oil Conservation" was the subect of a paper by Max W. Ball of the U. S. Bureau of

Mines. Mr. Ball decried the enormous wastage now going on and cited figures from various authorities that at the present rate our oil supply—7,704,000,000 bbls.—would last but 29 years, based on government figures of resources. This paper appears in full elsewhere in this number of the Derrick.

KERN OIL COMPANY DENIED APPLICATION

The State Supreme Court has denied the application of J. W. Jameson and T. J. Wrampelmeier for an order increasing by $55,500 a month the undertaking given to stay execution in a strongly contested oil land case in San Luis Obispo County. Jameson and Wrampelmeier were the plaintiffs and were successful in the lower court in a suit to quiet title to about 8000 acres of valuable oil land. An undertaking in the sum of $500,000 was given by the Chanslor-Canfield Midway Oil Company, the defendant and appellant. The respondents claim that their interest in the property is $1,273,000 and that $500,000 is not enough to protect their interests. They ask that $555,000 be added each month from February last until the decision is rendered on appeal.

DENVER MEN IN KANSAS OIL

A new oil company has just been incorporated under the laws of Colorado to operate in Kansas and Wyoming, it is known as the Midland Oil & Drilling Company, which starts with four leases in Kansas and two in Wyoming. The Kansas leases are located near Eldorado, not so far from Wichita, in Montgomery county, and in Anderson and Wilson counties. Altogether the company controls 160 acres in Kansas. The Eldorado field, near Wichita, has lately attracted a great deal of attention, and drillers have been very active for the last year. All the locations of this company are in likely territory.

In Wyoming the company holds a 160-acre lease on school land in the Powder River district, not far from the Midwest Oil Co.; also 160 acres in Carbon county.

The officers of the new company are James Hazlett, president and manager; S. O. Hunt, vice-president; C. F. Cabeen, secretary, and Thomas H. Campbell, treasurer. The head offices are in Denver.

NEWS FROM THE FIELDS

Great activity is reported from all of the old fields and many new wildcat ventures are going forward in unproven territory. The increased price of oil and heavy demand has given new life to the industry, and it is predicted that the coming year will see great developments.

In the Maricopa district drilling has been started on the second well of the Pat Welch lease, on Section 4, 11-23 and work is to be pushed as rapidly as possible. The No. 1 well of this company, on the same lease is now down to 4,000 feet and is expected to be completed at an early date.

The Melitia Oil Company is now paying the owners of the leasehold a handsome revenue. This lease, held by the Fulton Fuel and Read Oil Co., lies partly in the city of Maricopa. But 14 of the 33 wells are producing but the others will be cleaned and operated.

Unusual activity is apparent in the Standard Oil Company's properties near Maricopa, and four new wells have been started.

At Coalinga the Associated Oil Co., is pushing development work in all parts of its holdings, and is acquiring additional property.

The Coalinga Mohawk Oil Co., is planning new work on section 12, 20-15, and will drill four new wells. Each well will be carried to about 3,500 feet with a rotary and then completed to the oil sand at 4,100 feet with the standard tools.

At McKittrick the Standard is preparing to develop the tract secured from A. B. Spreckels. It is expected that this will develop into a good field.

In the Lost Hills district the Dudley & Dudley Oil Co., plans to have thirty new wells in operation, and it is drilling others in outlying sections.

Fourteen new wells were completed in the Midway-Sunset district during November.

It is reported that arrangements are being made to deepen the Cedar Spring Oil Company's well on the San Juan ranch, in San Louis Obispo county. The well is down 1950 feet and was cemented on water and a heavy flow of hydro-carbon gas, owing to disagreement of the owners. A new company is reported as being formed to take over the operation for the purpose of making a complete test of this district. Geologists give it as their opinion that a high grade oil will be found at about 2,500 feet.

FRESNO FLYER

From

San Francisco
(Ferry Station)
4:40 P. M.

Arrives

FRESNO
9:55 P. M.

Through Orchards and Vineyards—
Beautiful Niles Canyon—
Fertile Livermore Valley—
and the
Valley of San Joaquin.

OBSERVATION
PARLOR CAR.
RECLINING
CHAIR CAR.
DINING CAR.

7 Additional Trains.

SOUTHERN PACIFIC

Write for Folder on the Apache Trail of Arizona

Sixty Degree Gasoline Develops Much Power

Speaking recently on the purity of gasoline, Van H. Manning, Director of the Bureau of Mines, said:

"The Bureau of Mines is in entire sympathy with your campaign for purity in gasoline, and wishes to be of aid, not only to all of you but to the entire country in this important matter.

"We are today facing a serious condition in the petroleum industry. We have probably reached the summit of our crude oil production in this country. According to the United States Geological Survey, our future supply of petroleum is only sufficient to last us from twenty-four to thirty years at the present rate of consumption. This does not take into consideration any increasing demand as the years go by. In order to supply the fuel for the future automobiles, it will be necessary to make better use of our crude oil production in the future than we have in the past.

"In discussing the various problems involved, we must bear in mind that while the demand is steadily increasing, the producton of crude oil, which is the raw source of the gasoline is remaining approximately stationary if it has not been declining in the past year. A year ago gasoline was selling at 11 cents a gallon and was a drug on the market, due to the tremendous production of gasoline-rich crude produced by the Cushing Field in Oklahoma. This production, however, has declined from over 300,000 barrels of crude oil per day to less than 60,000 barrels per day.

"The Cushing crude contains from 25 to 30 per cent of gasoline. The new production which has compensated for the decline in the Cushing production, contains but from 15 to 17 per cent of gasoline. Notwithstanding the decline in the production of gasoline, the demand has steadily increased, due primarily to the increased use of the automobile. On January 1, 1916 there were two and a quarter million automobiles in use in the United States. It is estimated by the automobile manufacturers that there will be in excess of three and a quarter million in use by January, 1917, and by January, 1918, there will be in excess of four and one-half million automobiles in use. These figures are in addition to the increased use of motor trucks, farm tractors, stationary gasoline engines motor boats and so forth.

"This increasing demand for gasoline has been met partly by the automobile engineers and refiners. The automobile engineers have improved their automobile engines and carburetors, making it possible to use heavier fuels in the automobile of today, which would have been impracticable a year or two years ago. The refiners, taking advantage of the work of the automobile engineers, have been able to use heavier oils for gasoline, thereby increasing percentage of gasoline obtainable from the given amount of crude oil. This has resulted in increasing the end point from 150 deg. Centigrade, the end point of a year ago, up to an end point of 175 deg. to 200 deg. Centigrade, the end point of today.

"Let me explain to you what is meant by the 'end point' in gasoline. The end point is a term used in distillation of gasoline and is usually considered to be the temperature at which 95 per cent of the gasoline will distill off, if distilled in a proper flask at the proper rate. Recently the Bureau of Mines purchased four samples of gasoline sold in the District of Columbia. These gasolines were analyzed and the end point determined in each instance. The gravity of one was 64.8. The gravities of the other three samples ranged from 61.5 to 62. The end point of the first sample was 210 deg. Centigrade. The end point of the other three samples was 175 deg. The high and point of the first sample, together with its high specific gravity indicates that this is a blended gasoline. This is further borne out by the analysis, which indicates that 21 per cent is distilled over under 75 deg., whereas less than 10 per cent on the other three samples is distilled over this same temperature. This larger proportion of light products, which is responsible for the high gravity, indicates that casing head gasoline has been blended with heavy distillate, because the end point of this gasoline is 210 deg., as against 175 deg. for the other three gasolines analyzed. It is possible that this blended gasoline might prove satisfactory in some automobile engines.

"This will probably explain some of the difficulties that the people are having with the character of the fuel used in their automobiles, at the present time, particularly if the automobile is of a design of two or more years ago, not having the improved engine and carburetor design, it is not equipped to use the present-day low grade of fuel.

"Refiners are cooperating along another line to the same end namely, to increase the amount of gasoline and at the same time to keep the price down to a reasonable basis, by means of cracking kerosenes and heavier oils, thereby converting a certain proportion of the crude oil which was not formerly utilized for the purpose into gasoline. Last year there was produced by cracking processes approximately 2,000,000 barrels of gasoline. This year it is estimated that there will be produced more than 5,000,000 barrels of gasoline by cracking processes. This is all the more striking when it is considered that these 5,000,000 barrels of gasoline were made from oils which in the past did not enter into the making of gasoline, and indicates the possibilities of the present production of crude oil to supply the future requirements of the automobile.

"So, gentlemen, you can see that these are some of the problems that have to be taken into consideration in any specifications that are drawn up. We want to assure you as nearly as we can that you get a grade of gasoline that will be satisfactory for your needs; then we have to be sure that it is of such a grade as can be supplied by the refiners at a reasonable price. Unless the specifications do take these factors into consideration, they may result in restricting the supply and making the prices exorbitantly high, and also may deprive many people of the pleasure of owning a motor car by making the price of fuel prohibitive. With proper development of the cracking processes, and the cooperation of the automobile engineer, there is no reason why a suitable fuel should not be available for years to come and at a reasonable price.

"The Bureau of Mines has for a number of years appreciated the seriousness of the motor fuel problem; in fact, long before the sharp increase in prices of gasoline, this Bureau was aware of the conditions, and realized that this increase in prices would follow. It was at that time the Bureau began a serious investigation of this entire problem. The special investigation bearing directly on the quality of gasoline was begun eight months ago and is being continued today. Samples of gasoline were purchased in the open market in all parts of the country (and not from refiners), and were analyzed by

the Bureau's engineers, and engine tests were also run on the representative grades of gasoline. The results to date are contained in a publication to be issued in the near future by the Bureau of Mines. There is also in course of publication, and nearly completed, a report on gasoline specifications, which has taken into consideration the available supply, increasing demand, and the protection of the public, as well as fair treatment to the refining industry—all with the purpose of assuring a future supply of gasoline to the public at the most reasonable prices.

"One of the results that may prove startling to the public is that the gravity of the gasoline does not of itself necessarily mean a satisfactory basis for the purchase of gasoline. Engine tests were run by the Bureau on gasoline having a gravity of from 74 deg. to 60 deg. The net result of these tests showed a difference in power developed of less than 2 per cent between gasoline of 74 deg. gravity and gasoline of 60 deg. gravity. This is all the more remarkable when it is considered that 74 deg. gravity gasoline is selling at 31 cents per gallon, while 60 deg. gravity gasoline can be purchased at 22 cents per gallon.

"It is probable that the 60 deg. gravity gasoline, which can be purchased for 9 cents less a gallon can be used in the automobile with the same satisfaction as the 74 deg. gravity gasoline.

"All gasolines, under properly regulated engine conditions can be made to develop quantities of power which are not greatly different. This result was obtained from experimental work in our laboratories in Pittsburgh, and indicates that the claims made by many refineries for the power producing qualities of their gasoline are largely without foundation. It does not necessarily follow that all gasolines are equally good, but it is certain that exaggerated claims are made for the number of miles per gallon. The possible element of superiority undoubtedly lies in the quality some products have of giving maximum efficiency over a wider range of engine conditions. The fact of importance is, therefore, that if the user of gasoline can obtain almost as good results from a cheap gasoline as from an expensive, high-test product, as the power developed under like conditions varies little in our experiments.

"Recently, owing to the remarkable development of the casing head gasoline industry, that is, obtaining gasoline from natural gas, there has been obtained a product called 'blended' gasoline. The casing head gasoline as derived from natural gas is too volatile to be used directly. It is therefore mixed with oil just a little lighter than kerosene but heavier than gasoline. Such a blended gasoline may be of any gravity desired by the manufacturer, but is naturally different in composition and properties from the straight refinery product which it may chance to resemble in gravity only. This is due to the fact that it is generally composed of more of both of the heavier and lighter oils than gasoline made by the ordinary processes. On account of the larger proportion of light oil, it is possible to use a correspondingly large proportion of heavy oil and still have an average gravity the same as ordinary gasoline, but which may act very differently in an engine on account of the large portion of heavy oil contained in the blended product. This is not intended to discourage the use or manufacture of casing head gasoline. If the casing head gasoline is blended with the proper oils, that is, oils that are not too heavy, it can be used satisfactorily in an automobile engine. Casing head gasoline is an important addition to our fuel oil resources, the production amounting to approximately 5 per cent of the total production of gasoline this year.

"The Bureau of Mines is now preparing gasoline

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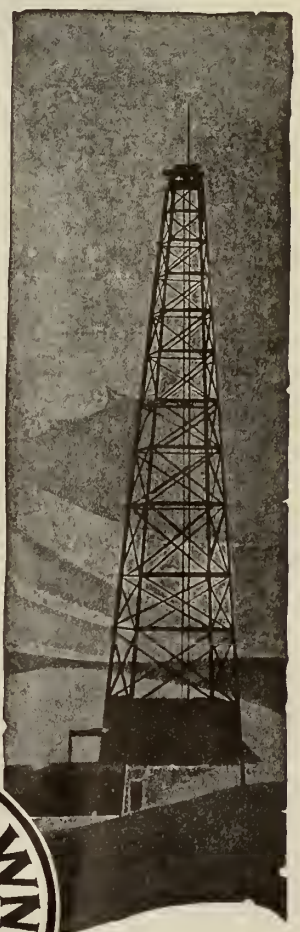

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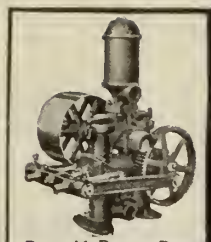
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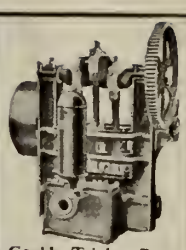

Goulds Triplex Pump

specifications for the General Supply Committee of the Federal Government, which will undoubtedly be of interest to all users of gasoline. These specifications should be issued within the next ninety days, and I shall be very glad to see that the members of the Retail Merchants' Association receive copies.

"For your information, I might also say that the Bureau of Mines has a complete testing laboratory, equipped with engines and other necessary apparatus, with which it will be possible to make power tests on gasoline, as well as on other internal combustion engine fuels. The results of these tests will be available to the general public, and will be of the utmost importance in clearing up the difficulties with which you are confronted today.

"The Bureau of Mines has arranged to co-operate with the Curtiss aeroplane manufacturing concern to test their gasoline in order to arrive at a satisfactory gasoline for aviation purposes for use by the United States Government. Of course, this is a gasoline for a special purpose, and of a character in which the average automobile user is not interested.

"In conclusion, gentlemen, I wish to emphasize the necessity of bearing in mind the following consideration in your efforts to obtain purity in gasoline. We must keep before us the fact that there should be the greatest possible use of the raw materials consistent with economic results. For instance, no specifications should be drawn up which would exclude certain materials now being used satisfactorily, for if eliminated, this would correspondingly restrict the supply and automatically increase the price. This of course, is not desirable. The Bureau is exceedingly anxious that all the available resources for the making of gasoline be used to their greatest extent, and it is also interested in the encouragement of further economy in design of the automobile engine. Any specifications that would restrict the use of some of the low-grade oil resources would at once stop any further efforts toward improvement in engine design. At the same time the Bureau is interested in seeing that the public obtains a satisfactory fuel.

"To these ends, the entire facilities of the laboratory of the Bureau of Mines are at your disposal. I wish you great success in your undertaking."

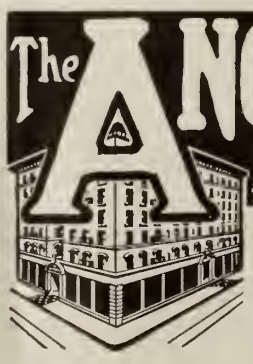
OIL STOCKS REDUCED

Reports of the amount of crude petroleum held in storage in the various fields in the United States, show a gradual reduction in amount. This is common to all grades and to all fields. Last month the stocks of California oil showed a loss of over a million barrels, and the reduction for the year, so far, shows a reduction of 10,000,000 barrels. During the last two months stocks held by the pipeline companies in the Mid-Continent and eastern fields, were drawn on to the extent of over 1,000,000 barrels. The amount held in the Texas Panhandle also showed a reduction in the last two months, although the amount on the first of October was greater than at the beginning of the year.

It is presumed that stocks are increasing in Wyoming and also in Kansas and at Healdton, where the producers are putting their surplus into steel storage tanks. But the amount thus tanked does not equal the loss in other localities.

STANDARD HAS EIGHT-HOUR DAY

The Standard Oil Company of California has announced to its employees that all classes of labor, skilled and unskilled, in the refineries, on the pipe lines and in the producing department, will be placed on an eight hour day basis with no reduction of wages. The plan will become operative as soon as details are perfected.



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Rights of Locators Defined

A judicial opinion, covering a quite definite interpretation of the so-called Pickett act, affecting the rights of oil locators in the presence of federal land withdrawals, was handed down last month by the United States Circuit Court of Appeals at St. Louis. The decision sustained the contentions of certain oil claimants and the judgment of Judge Riner of Cheyenne, in an appeal by the government from the decree of the federal district court. This opinion is of importance, because it is the first utterance of a court of high resort concerning the language of the statute of June 25, 1910, amended August 24, 1912.

The Pickett act was adopted by Congress for the political purpose of bolstering up the historic, extraconstitutional oil land withdrawal order of President Taft in September, 1909. While conferring upon the executive the power to make temporary withdrawals of lands from entry, other than those containing metallic minerals, the new law, as now construed, really enlarged the privileges of the oil land locator who has made entry upon lands subsequently reserved. The language of the statute upon this point is:

"The rights of any person who, at the date of any order of withdrawal heretofore or hereafter made, is a bona fide occupant or claimant of oil or gas-bearing lands, and who, at such date, is in diligent prosecution of work leading to discovery of oil or gas, shall not be affected or impaired by such order, so long as such occupant or claimant shall continue in diligent prosecution of said work."

The adjudication of this clause by the Court of Appeals at St. Louis was made in the case of the government against the Grass Creek Oil and Gas Co. and the Ohio Oil Co., operating in Wyoming. Two important questions were considered in the hearing before Judge Riner: (1) Concerning the technical nature of an oil discovery under the previously existing law; (2) concerning the interpretation of the clause of the Pickett act quoted in the foregoing paragraph. The Court of Appeals deemed it unnecessary to pass upon the first of these issues, in view of its subsequent conclusions concerning the second question; and by pursuing this course, the judges indicate, or seem to indicate, that the Pickett act supercedes the law of discovery with respect to the possessory rights of the locator. That is to say "diligent prosecution of work leading to discovery" affords as secure possessory title as actual discovery, so long as there is no conflicting claim; and it is very apparent that a government withdrawal order is a sufficient bar to subsequent oil entries, if not to the surface rights of agricultural locations.

In the light of the Court of Appeals decision, the principal effect of the Pickett law with respect to oil locations is rather in the new precedent which it creates with respect to the possessory right on lands subsequently included in a reserve. It illustrates afresh the folly of frenzied "conservationism" in tinkering with the land laws which have stood so long for the benefit of American civilization. The matter of mineral discovery as a basis of law is one of extreme importance and delicacy, and it should not be touched by Congress except with the deliberate intention to establish a uniform inchoate right of prospecting or to abolish the law of discovery altogether. Federal land leasing, of course, is utterly inadmissable.

The primary result of the Court of Appeals decision is to provide a definition of diligence in the matter of pursuing exploratory work. Under this head, the court gives a very liberal interpretation of the Pickett law. The concluding paragraphs of the opinion are quoted here with:

"It is claimed that the defendent, the Ohio Oil Co., was not a bona fide occupant or claimant of these lands, in the diligent prosecution of work leading to the discovery of oil or gas on May 6, 1914, when the order for withdrawal was made. It is claimed that actual drilling operations were not commenced until July 1, 1914, on the northwest quarter and on July 31, 1914, on the east half of the southwest quarter, and that, until the actual drilling was begun, there was no prosecution of work within the meaning of the Act of Congress We are of the opinion that this is too narrow a view to take of this statute. The enactment of this proviso by Congress could have but one object in view, and that was to protect the rights of all persons who, at the date of an order of withdrawal, are occupying or claiming oil-bearing lands in good faith, for the pnrpose of acquiring them under the laws of the United States, and are diligently prosecuting the work leading to the discovery of oil. Before the enactment of this statute, discovery of the mineral was essential to make a location. As frequently, in fact, in most instances, prospecting was necessary in order to determine whether oil or gas are on the public lands, and large sums of money were necessarily expended to ascertain this fact. Congress, by this proviso in the Act of 1910, extended its protecting arm to those acting in good faith in an effort to ascertain whether there was oil or gas under them. In our opinion, when a citizen of the United States in good faith enters upon public land for the purpose of discovering oil or gas, takes possession of the land by placing a caretaker thereon while he is taking proper steps to obtain the material necessary for the work of constructing the camps, enters into contracts for drilling, acting as expeditiously as possible, in erecting camps and preparing for the drilling, spends money and enters into contracts whereby he becomes liable for sums of money to prosecute the work leading to discovery of oil or gas; and as soon as it is possible, by the exercise of proper diligence, begins the work of drilling and continues it diligently and expeditiously until oil is discovered in commercial quantities, he is within the protection of this proviso. As was stated in Borgwaldt, vs McKittrick Oil Co., 164 Calif., 150, although that case did not involve this Act of Congress, but was a contest between claimants, 'We do not mean to hold that such diligent prosecution of the work may not include such actual preparation for the same as the bringing to the claim of material necessary therefor.' The learned counsel for the government in fact concedes the correctness of his proposition. In his brief he says: "It is not contended by the government that the construction of a camp might be a part of such work, but that, unless such camp is for the purpose of furnishing a base for drilling operations upon the claims in controversy, its construction is not diligent prosecution of work, so far as the claims in controversy are concerned.' The evidence clearly shows that the defendants brought themselves within this rule. Everything they did was 'for the purpose of furnishing a base for drilling operations on the lands in controversy.' For what other purpose did they make these expenditures, and enter into contracts for erecting the camps and the drilling by Mr. Good?

"The learned trial judge committed no error in the application of the law to the facts, as shown by the evidence, and the evidence sustains his findings beyond question."

THE OIL FIELDS

During the past week there was no occurrence in oil fields of the United States to create more than passing interest. The expectation of an advance in the quotations for Oklahoma crude petroleum failed to materialize, although the conditions would appear to be favorable for it. The production of the Western fields is gradually lessening, or at least shows no material increase in any one week which is not lost in another. Nothing is expected to cause any increase in the output of the fields east of the Mississippi, and so any addition must come from the great territory of the middle west. Failing there the total output of the United States must be expected to decrease so far as regards the lighter gravity petroleum.

Kansas, which has been looked upon as the best prospective territory for an immediate supply, has apparently reached a point where new pools must be found or a decline in the production will follow. The old wells of Augusta are reported to have shown a considerable decrease within the last ten days, and some estimate the loss at 20,000 barrels from the estimated amount of three weeks ago. A number of good wells were found in this pool during the past week, but none was of the gusher size or important as to location. El Dorado while it is a smaller pool than Augusta, is considered by many as a more promising locality. The wells already producing appear to maintain their output better than those in its twin pool, and there is less danger from water. Deep sands also add to the attractive qualities of El Dorado. The oil from Augusta and El Dorado is now all being handled by pipe line; put in storage or shipped by tank cars. There is considerable wildcat work ahead of developments in Kansas, and one or two mystery wells are reported. Since the failure of so many interests in the Mid-Continent, however, the trade is less exercised over them than in past days.

The Healdton field is the only one in Oklahoma which appears to be increasing its output. New sands and extensions to the territory are making this a promising locality for the operator. A gain of some 5,000 barrels daily is estimated in the pool within a couple of weeks.

The Texas Panhandle has many wildcat tests at work and frequent showings have been reported within a few months, but with the exception of a well on the Knight lease in Archer county, they are very small, and mere prospects. Deep tests are now the rule in this locality, and any venture far from the production is started so it may go deep if necessary. The production of North Texas is smaller than three months ago, but larger than at the beginning of the year.

The Caddo field shows a declining tendency. There is much territory to be developed which promises fair producers, with the occasional gusher which may be found anywhere in Louisiana, but the number is limited. Since the large wells at Crichton passed the production has gradually declined until it is now only about half what it was a year ago. A promising gas field has been opened at Monroe, in the northwestern part of the State. This has started many tests, but the expectations are that an oil field may be found in the vicinity.

In the Eastern field last week, there were only routine developments. The wells in the new pool at Dents Run are declining rapidly, notwithstanding the use of torpedoes, and evidently the producing area is a small one. The best of all the fields of West Virginia now is that at Cabin Creek, and its boundaries are still undefined.

The deep sand fields of Ohio are offering no large wells at present The drilling at present cost for material is expensive, and the producers obtained are not so large as to invite the operator to make any extra effort.

The field conditions are such that producers are making numerous tests in localities heretofore considered outside the oil belt, and in most instances the wells will be drilled deeper than has been the custom. Sometime, somewhere this practice is likely to discover a new producing formation.

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California Concentrates

Two wells will be put down on the Hobson ranch, near Ventura, by the Central Petroleum Corporation.

The Union Oil Co. has leased 1200 acres adoining Long Beach and will begin drilling soon.

The Associated Oil Co. has taken over the Pantheon Oil Co. on section 32, 19-15, West Side field, Coalinga.

The Associated Oil Co. has declared a quarterly dividend of $1.25 a share.

The Mexican Petroleum Co., Ltd., has declared a dividend of $240,000 on the preferred stock.

The Pan American Petroleum and Transport Co. has declared a dividend of $175,000 on its preferred stock.

The Doheny holdings in the Santa Maria field will soon have fifty rigs in operation

The Pinal Dome Co. has developed Graciosa Well No. 14 and now has a 300-barrel well.

In Dome B7, Cat Canyon, the drills are in deep oil sand.

Drilling on Escol No. 2, Santa Maria, is progressing and the well is filling with oil.

The Pan American has begun drilling No. 2 well on the Bell ranch, near Santa Maria.

The Great Republic Oil Co. is preparing to resume work on the company's well near Fillmore.

The Shell Oil Co. is preparing to start work near Shafter.

The Standard Oil Co. has secured a 20-years' lease on 700 acdes from Mrs. Anita Baldwin, near Montecello.

The John Kern Oil Co. expects to resume work on its wildcat well in section 20, 15-12, near Coalinga.

The Pinal Dome Oil Co. is contemplating the development of the Flensher lease in the Santa Maria field.

The Security Oil Co. will operate in the Lost Hills district.

The West American Oil Co. has leased the Pivie ranch, near Ventura, and will begin drilling soon.

Hattie O. McNee of San Francisco will lease to E. P. Cooney and J. B. Squires 200 acres in the Edna district, near San Luis Obispo.

The Gilroy Oil Co., operating five miles from Gilroy, has taken a lease on the oil lands on the Whitesides and Hedges ranches.

The Rock Island Oil and Gas Co. has incorporated at Phoenix, Ariz., with a capital of $150,000. The incorporators are Wm. A. Clifton, L. L. Blord and Carl Rudolph.

The Calcasien Oil Co. has incorporated at Phoenix, Ariz., with capital of $50,000. The incorporators are Geo. B. Ziegler, A. C. Fleig, L. W. Scholars, J. W. Hart, Leon Locke, M. Kay and C. E. Shade.

The Hutchinson Petroleum Corporation of Los Angeles has incorporated with capital of $10,000. The incorporators are F. T. Hutchinson, R. L. Hoff and Robert Marchetti.

The United States Petroleum Co. of California has incorporated with a capital of $510,000. The incorporators are H. R. White, R. L. McWilliam, Edward Schwab, Roland Foerster and H. Phleger.

This Richfield Oil Company has taken over the refineries of the Central Refineries Company, at Bakersfield.

It is reported that prospecting for oil in the semi-tropical region west of Bakersfield will begin again soon.

The Santa Fe Oil Company is getting ready to start a new well, No. 77, in the Fullerton field.

The Union Oil Company is preparing to construct a big refinery at Los Angeles harbor, at a cost of $2,500,000.

The Mascot Company is preparing to drill eight wells on section 26, 32-23 on Twenty Five Hill.

Development work continues strong in the Brea-Fullerton field.

The Oil Exploration Company is building a new 106-foot combination rig for well No. 2, at Coalinga.

Well No. 3, on the lease of the H. S. Williams Oil Co., on the North McKittrick front has been brought in with 150 barrels a day.

The Union Oil Company has leased 1,000 acres in the vicinity of Signal Hill, near Long Beach, and will drill a test well.

Arrangements are being made to do considerable development work in San Luis Obispo county, west of the Carriso Plain.

The Standard Oil Company has returned to the Santa Maria field for purchasing oil. This will increase the production, for idle wells will be operated.

The Arizona Oil, Gas and Development Co. has incorporated for $500,000. Incorporators are R. S. Wall, C. A. Fraser, Albert G. Kohnhorst, D. A. Carpenter, J. D. O'Connor, W. B. Hare and David Harrington.

Federal Judge Bean has appointed Howard M. Payne receiver of the Devil's Den Consolidated Oil Co., and the Lost Hills Mining Company. Suits against these two companies to recover lands for the government are pending.

The Casmalia Syndicate is delivering 1,000 barrels of oil a day to the Associated Company's pipe line at Santa Maria. The Company has decided to start five new strings. The latest development of the property was the bringing in of a 500 barrel well.

OIL MEN WORRIED OVER CONTRACTION

Oil men believe a further contraction in the output of petroleum in the Mid-Continent fields will be shown in the reports of the next few months. Most apprehension concerns the Cushing and Shamrock fields. The estimated present output of these two fields is 120,000 barrels a day, In the beginning the Cushing alone had a daily production of 300,000 barrels. Now the total production of the entire Mid-Continent field is placed at 340,000 barrels a day.

In face of the decline and the prospective additional decrease in petroleum production demand for refined oil, mainly gasoline, continues active in this country, although high prices abroad are having an influence on shipments to the Allied countries. Consumption of gasoline in Europe is practically confined to war requirements, which, however, are on an extremely large scale. Indi-

vidual consumption of gasoline in Europe is practically out of the question, because of high prices; for instance, gasoline in Italy is $1 a gallon.

Any further decline in the production of the high-grade midcontinent oil is bound to result in higher prices for crude. For the last few years refiners east of Oklahoma have relied mainly on midcontinent crude for supplies, because of its high gasoline content and its remarkable average cheapness. High-grade Cushing oil, for which refiners now pay liberal premiums, sold for 40c and less a barrel not much more than a year ago and all the big refiners put in enormous stocks then.

The big interests still are in a favorable position, so far as their cost and supplies of Cushing crude are concerned, but these stocks are gradually lessening and the time is approaching when the cost of crude supplies to the big refiners is going to be on a much higher plane, unless another Cushing is developed. Even though another big pool is brought in, it is improbable that it will be so badly handled from the point of view of the producer as was Cushing, although it must be admitted that the outbreak of the war and its early demoralization of business was an additional disturbing factor when Cushing was opened.

With the prospective decline in midcontinent, oil men are making energetic efforts to get production elsewhere. At present Wyoming is attracting the majority of the producers, because of the excellent quality of oil there, being even better grade, in certain sections, than Pennsylvania oil.

The big companies are actively searching new fields in California, and several large transactions have been made.

Texas and Mexico, with their heavy oils, are being rapidly developed. Notwithstanding difficulties in the Mexican fields, the big companies have shown themselves able to take care of their property and interests through two serious disturbances in the last few years, and present indications point to a further strengthening of their position in that country.

"In spite of disadvantages, Federal opposition, and the extreme youth of the industry, there should be more than 6,000,000 bbls. of Wyoming's high grade, paraffine-base oil produced during 1916. Future years will see larger yields, not only increasing yields from fields already producing, but from fields which have to date made no production, and from pools which have not yet been drilled. The future of Wyoming's petroleum production looks very bright indeed."

MANY WELLS STARTED

The report of the State Mining Bureau for the week ending November 25, 1916, shows thirteen new wells starting to drill, making a total of 663 since the first of the year. Six wells are to be deepened or redrilled and three abandoned. There are sixteen wells ready for test of shutoff which is usually inspected by officials of the Bureau. Since the first of the year there have been 820 such inspections which have absorbed the greater part of the time of the Bureau staff. This work has been given particular attention for the reason that it has insured that new or repaired wells would be completed in such a manner as to prevent damage to the oil fields by infiltrating water and "an ounce of prevention is worth a pound of cure." However, this work is of less ultimate value than that of outlining proper development methods to meet various geological conditions, and steps are being taken to alter the procedure when tests are made so as to enable the Bureau to perform its more important functions.

The routine work of testing has prevented widespread study and correction of damage done by improper work through the past fifteen years, but a few such cases have been acted upon and prove that repairs properly made will greatly increase the value of some properties which were badly flooded. One of the most remarkable cases of improvement is at the property of the Del Rey Oil Company in the Kern River field where the proper plugging of a well, by the owners working in co-operation with the Bureau, has materially decreased operating cost and also increased the productiveness of the property.

HELPING THE WELLS

The great damage to the Kern River oil field from infiltrating water has been a matter of common knowledge for some years and the opinion has been prevalent that little or no improvement could be hoped for The State Mining Bureau, during its first year's work in the regulation of oil well drilling has been forced to give most of its attention to the proper drilling of new wells, but has been able to attend to a few old cases and the results are extremely encouraging to operators in flooded fields. One of the most remarkable cases, according to a statement by Mr. R. P. McLoughlin, State Oil and Gas Supervisor, is that of the Del Rey Oil Company in the Kern River field where the owners working in co-operation with the Bureau plugged off the bottom water in one well and shut off top water in another with the result that the daily production from the group of wells has been raised from about 135 barrels to over 200 barrels, and the amount of water handled daily has been reduced from about 1750 barrels to about 120 barrels. Operating costs have also been reduced because it is now unnecessary to run a compressor plant to handle the water. The results are also beneficial to neighboring properties.

The Bureau now has an engineer, Mr. C. McGregor, giving his entire attention to the Kern River field. The first steps in his work will be a complete examination of the fields with a view to determining those localities most seriously affected by water and offering the best opportunities to improve conditions. The data already at hand indicate that a comparatively few wells are responsible for most of the damage and that great improvements in production and operating cost can be expected.

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Vo. X. SAN FRANCISCO, JANUARY, 1917 No. 5

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Vol. X SAN FRANCISCO, JANUARY, 1917 No. 5

Government Petroleum Work

Van. H. Manning, Director of the Bureau of Mines, in his annual report just issued, says concerning the petroleum investigations:

The work of the petroleum division for the year 1916 may be classified under three heads: Petroleum Technology, Engineering Technology, and Chemical Technology.

The work in petroleum technology has been primarily in the elimination of needless wastes in the production of petroleum and natural gas, and covered investigations of underground wastes, the use of mud fluid in drilling, and the possibilities of increasing the recoverable percentage of oil from oil sands, as well as cooperative work with the Bureau of Indian Affairs, and the General Land Office.

The investigations under engineering technology included a study of storage and fire conditions, and of the manufacture of gasoline from natural gas, and the mechanical development of the Rittman process together with making field maps to be used for the investigations, carried on by the bureau. Preliminary arrangements were made for the collection of statistical information on the refining industry throughout the United States for the purpose of authoritatively advising the public as well as the industry as to market conditions. It is hoped that it will be possible to announce complete and definite results at least annually.

As a result of the chemical-technology work of the petroleum division, the Rittman cracking process for the manufacture of gasoline, toluene, and benzene from kerosene or any other available fractions of petroleum is now a commercial success, and the Bureau of Mines is able to give to the public a commercial cracking process, free from royalty, which will make available for internal-combustion engine large quantities of otherwise unavailable fractions of petroleum. Investigations have also been made relating to the analytical distillation of petroleum, the properties of gasoline, and the various methods of analyzing petroleum and its products in general use in this country.

In addition, the Bureau of Mines has cooperated with the Bureau of Indian Affairs in the supervision of oil and gas operations on Indian lands, and has acted in an advisory capacity in matters concerning the leasing of oil and gas properties on the Osage Indian Reservation.

The petroleum division is under the supervision of W. A. Williams, chief petroleum technologist. The investigations undertaken and the bureau officials in direct charge are given below:

An investigation of underground wastes of oil and gas was undertaken by W. F. McMurray and J. O. Lewis, oil and gas inspectors, and the attention of the operators was called to the necessity of casing off water at uniform horizons in order to protect the oil and gas sands from water. The operators were also shown the necessity of securely sealing wells, and thereby confining natural gas to its original strata until such time as it is utilized. Various examples of underground waste were cited and explained to prove the contentions of the Bureau of Mines engineers. A report embodying the results of the work was prepared for publication.

The use of mud fluid in drilling oil and gas wells was investigated by W. F. McMurray and J. O. Lewis. Instructive experiments were carried out and numerous practical demonstrations were made, and a number of defective wells were corrected after all efforts of the operators had failed, the Bureau of Mines engineers being universally successful. In a report submitted for publication, the advantages to be gained by using mud fluid, such as safety in drilling through high-pressure gas sands, the protection of oil and gas sands against infiltration of water, the protection of the casing from corrosive waters, and the ability to confine the gas to its natural strata without loss, are fully explained. One of the best examples of the benefits to be derived from the use of mud fluid is shown by a comparison of conditions existing in the Cushing and in the Blackwell fields in Oklahoma. The Blackwell field, probably the equal of the Cushing as a gas field, has been developed by methods advocated by the Bureau of Mines, and instead of recovering less than 10 per cent of the gas worth from 2 to 3 cents per 1,000 cubic feet, the Blackwell operators should recover more than 80 per cent, and they are asking 7 cents per 1,000 cubic feet. The increased value of the Blackwell gas is due to the fact that, by the use of the mud fluid, the gas can be confined in the original gas sand without loss until market conditions are favorable. The estimated saving of our natural resources in the Blackwell field alone is conservatively placed at $20,000,000.

It is gratifying to state that oil and gas operators in Kansas are conserving large volumes of gas encountered in drilling for oil, as well as protecting oil and gas sands

against infiltrating waters, by using mud fluid. Previous to the introduction of the Bureau of Mines methods, the operators had not been successful in obtaining desired results in protecting their gas against dissipation and in protecting the oil and gas sands against infiltrating waters.

W. F. McMurray has spent considerable time in advising operators of oil properties operated under the act of August 27, 1915, how to protect oil and gas sands against underground waste or damage from infiltrating waters.

An investigation of the use of compressed air to increase the recoverable percentage of oil was carried on by J. O. Lewis in West Virginia, Oklahoma, Ohio, and Pennsylvania. A comparison was made between the use of compressed air and the use of water for flushing oil sands to recover oil that could not be recovered by the usual pumping methods. It is expected that the results obtained from this investigation will emphasize losses that heretofore have not been duly considered, and it is hoped that an increased recovery of oil from the oil sands will result.

During the year the Rittman process for the manufacture of gasoline, benzene, and toluene was perfected mechanically and demonstrated to be commercially successful. A report covering all work in connection with the development of this process was published. The work was done by W. F. Rittman, consulting chemical engineer; E. W. Dean, assistant organic chemist; C. B. Dutton, law examiner; W. A. Jacobs, junior chemist; and Clarence Netzen, assistant chemical engineer.

A. R. Elliott, assistant engineer, has been making detail maps covering producing oil and gas fields, which show the location of wells, storage tanks, pipe lines, and the ownership of the properties; also a series of general field maps showing principal cities, rivers, railroads, and the relative positions of fields, pipe lines, roads, and refinery sites in the oil-producing States. These maps are for the use of the Bureau of Mines' engineers in connection with their investigations. Mr. Elliott has also drawn many of the illustrations accompanying the publications submitted by the members of the petroleum division.

During the year 1915 J. H. G. Wolf, petroleum engineer, was assigned to the Department of Justice, to assist in preparing special suits against various interests in California.

A bibliography on petroleum and allied substances has been prepared by E. H. Burroughs, editorial assistant, from the literature of the year 1915, and will be published by the bureau in the near future. This is a compilation of reference to the books, official reports, and the most important articles published during the year, arranged according to a subject classification that will be included in the more important journal articles published during the year, the references being arranged according to subjects. A similar compilation for 1916 is in the course of preparation.

A technical paper covering the essential feature of construction and operation of the Rittman cracking furnace for the manufacture of gasoline has been prepared by C. P. Bowie, petroleum engineer. This paper is intended for use of licensees of the Rittman process as a guide in the construction and operation of the Rittman plants, and is now available for distribution by the bureau.

Licenses for the use of the Rittman process have been granted to 22 oil companies operating refineries throughout the various oil fields of the United States. Conferences regarding the details of construction and operation of the Rittman cracking tubes have been held with these various licensees by Messrs. Bowie and Netzen. The bureau's San Francisco station has been equipped with an experimental Rittman furnace, operated by Mr. Netzen, and various grades of California oil and distillates have been tested and the results furnished the licensees of the process. This work indicates that the Rittman process can manufacture gasoline for as low as 6 cents per gallon from stove distillate costing 2 cents per gallon.

Investigations in connection with the products made by the Rittman process were carried on by Messrs. Rittman, Dean, Gustav, Egloff, chemical assistant; Oscar Byron, junior chemist; and T. J. Twomey, representing the Aetna Explosives Co. under a cooperative agreement. These investigations included the thermal reactions of petroleum and aromatic hydrocarbons in the vapor phase; equilibrium relations among the aromatic hydrocarbons in cracked petroleum; the utilization of aromatic hydrocarbons derived from cracked petroleum; the thermal reactions in the vapor phase of various coal-tar oils and distillates; and the range of applicability of the liquid sulphur dioxide method for the determination of aromatic constituents in petroleum mixtures.

An investigation of the various gasolines sold on the market during 1915 was made by Messrs. Jacobs, Rittman, and Dean. The properties of the gasolines were determined and mechanical tests were made to determine the relative efficiency of the various gasolines as motor fuel. A report for publication by the bureau was submitted.

An investigation of the various methods of analyzing and testing petroleum and petroleum products in general use in this country was made by David T. Day, consulting chemist. The results are expected to help to standardize methods. The data obtained will be issued as a bureau report.

The analytical distillation of petroleum was studied by E. W. Dean, and as a result a special type of distilling flask was adopted for analytical work. The data obtained will be embodied in a report for publication by the bureau.

An investigation was made of a new absorption method of extracting gasoline from natural gas. By this method natural gas is brought in contact with a petroleum distillate of about 35 deg. B. gravity whereupon the oil absorbs the gasoline from the natural gas. The oil, charged with gasoline, is then pumped to steam stills, where the gasoline is recovered, the oil being used repeatedly. The process is important in that, if generally applied, about 100,000,000 gallons of gasoline can be recovered from natural gas each year.

CADDO OIL AND REFINING CO.

Articles of incorporation have been filed at Shreveport, Pa., for the Caddo Oil & Refining Co., with a capitalization of $10,000,000. The statement is made that a fund of $750,000 will be placed in the treasury immediately for development work. The new enterprise has taken over the following properties: Caddo Oil Refinery, Shreveport Oil Refinery, Red River Pipe Line Co., Star Oil Co., Oil Fields Gas Co., Globe Oil Co. and the State Oil & Gas Co.. In addition to the holdings of these companies they have acquired 31,000 acres of land in Bossier Parish from E. K. Smith and 12,000 acres of leases in proven territory, as well as many options, trades for which have not been definitely closed. The properties include 45 producing wells and the present net earnings are estimated at $500,000 per annum. All of the stock will be pooled and none of it offered for sale.

Defines Navy's Need

Assistant Secretary of the Navy Roosevelt, lately defined his attitude toward the oil lands of California, defining the navy's needs, as follows:

It seems a pity that the issue of petroleum reserves for the United States navy has, to a certain extent, been clouded by legal or other claims which do not in any way affect the broad proposition. The chief consideration must be that of the good of the country from the point of view of its national defense.

The very life and future existence of the United States navy is at stake. This may be easily proved by the following statement:

First—Oil-burning naval vessels possess great advantages over coal-burning vessels. The following may be quoted as some of the reasons:

(a) Large excess of speed.

(b) Absolute control over the emission of smoke so that advantage may be taken of the ability to utilize smoke screens.

(c) Greater radius of action.

(d) Reduction in fire room force of about 55 per cent.

(e) Ability to refuel at sea, thereby increasing the effectiveness of the fleet by at least 25 per cent, as that of coal burners would be absent from their station for refueling.

(f) Ability to maintain maximum speed for as long as the fuel lasts, because fires do not foul and fire room force does not become exhausted.

(g) Flexibility in regard to increases and decreases of speed without loss of fuel, water and time.

(h) Higher safety of the vessel from submarine attack because of greater permissable subdivision of ship.

Added to these advantages is the consideration that the scouts, destroyers and battle cruisers authorized by the last naval appropriation could not be built if coal were used as fuel. As a result of these and other reasons the Navy Department some time ago definitely adopted the policy of building exclusively oil-burning vessels. It may be set down as a definite conclusion that the navy cannot revert to coal-burning vessels without enormous loss of efficiency, and, furthermore, that the navy will not so revert.

Secondly—In regard to the amount of oil necessary for the future of the naval service the subject must be considered under three heads:

1. A reserve supply in tankage away from the immediate coast line for reserve in time of war.

2. A current supply in tankage of fueling posts.

3. A natural underground protected reserve to ensure supply for the future oil-burning ships.

Little need be said about the reserve tankage supply for use in time of war. It is estimated that the navy should have on hand in time of peace storage tanks capable of holding enough oil for a full two years' supply to the fleet for war time. This system of tankage should be begun immediately and expand as the number of oil burning ships in the navy increase from year to year. For our present needs we should have probably 2,000,000 barrels so stored. Ten years hence we ought to have 20,000,000 barrels.

In regard to the current supply in tankage at fueling ports, this is being gradually provided by the navy. An important factor of this is the construction of additional fuel ships, so that the navy may be in a position to obtain its oil from all the markets of the world to its best advantage, suggestion has even been made that it would be the wiser policy to take care of the navy's current needs in time of peace from oil fields outside of the United States thus causing less depletion of our own petroleum fields.

In regard to the last and by far the most important form of supply—the natural underground protected reserve—we have but to look certain well known facts frankly in the face. We must admit that the total amount of oil within our continental limits is growing less from year to year and the number of available sources of new supply is necessarily diminishing. We already know the general figures in regard, for instances, to the Appalachian oil field, and we know also that the peak of supply has been, or will soon be, reached in other fields, and that there is not much probability of discovering new fields of the same magnitude as those already opened. Add to this the known fact that commercial consumption of oil is increasing and one must reach the inevitable conclusion that there must be soon either importations from foreign fields or a serious shortage in this country. Oil men are much inclined to ridicule the idea that there can be ever a shortage of oil for naval purposes. They base this perhaps on a lack of knowledge of what out future needs are to be, and the following figures may be perhaps a surprise to people who have not gone into this question from the point of view of the future. The navy burns today in time of peace about 842,000 barrels of oil. The construction of new ships during the next few years already authorized by Congress, will call for approximately the following annual consumption:

Fiscal year 7917	1,475,000 barrels
Fiscal year 1918	1,942,000 barrels
Fiscal year 1919	2,845,000 barrels
Fiscal year 1920	4,175,000 barrels
Fiscal year 1921	5,854,000 barrels
Fiscal year 1922	6,574,000 barrels
Fiscal year 1923	6,731,000 barrels

Further, if the General Board recommendation for the replacement of battleships after they have been in service twenty years is carried out by Congress, the total consumption of oil in the fiscal year 1927, or ten years hence will reach the enormous total of 10,237,000 barrels. You will not blame me if I wonder whether the engineers of this country have carefully weighed the naval needs for the next ten years in the light of these startling figures.

From the military point of view, in fact from the broadest point of view of national defence, it is absolutely vital that we should be able to obtain within our own borders this amount of oil if our navy is to be kept at the highest point of efficiency. It is perhaps not strange that the Navy Department has, therefore, made strenuous efforts to obtain oil lands sufficient for the navy's needs. I do not want to take up any controversy relating to the rights of any individual or of any private company to certain specific lands. I take it for granted that the government of the United States ought not to and will not deprive any citizen of his legal property without adequate compensation. There is no reason why such protection cannot be given either by the courts or by a specially created tribunal created to adjudicate all matters in dispute.

The important matter is that the government has the right to and must set aside reserve oil lands and prevent absolutely the taking of oil from these lands for private purposes. If private individuals have valid claims on these lands they must be adequately compensated for these claims, but they must cease to remove oil from these

lands. It would be the height of ridiculousness for the government to set aside certain oil-bearing properties and allow private concerns to take out oil from any portion inside of the outer limits of such a reserve. Any child knows that oil flows to a greater or less extent over large areas underground, and government oil lands must be absolutely and definitely protected against tapping from other sources.

There is in the first place no question that the government has the right to create such reserves; there is in the second place no question of the military necessity for creating such reserves, and there is in the third place no question that the government, backed by the people of the United States, is going to get these reserves. What is needed now is not a fight by those who see the possibility perhaps of personal exploitation and possibly large gains: what is needed is the co-operation for the sake of the nation as a whole on the part of the hundreds of patriotic Americans who have today interests in the production of oil. There is no question that a fair method can be worked out by which the rights of the individual will be wholly protected and the defense of the country in this vital respect thoroughly safeguarded.

Oil Conservation By Government

The annual report of the secretary of the interior for the fiscal year ended June 30, 1916, makes a strong plea for adequate funds for conducting investigations relating to petroleum and natural gas. In showing the urgent need of further funds for investigations the secretary says:

"In the calendar year 1915 more than 281,000,000 bbls. of petroleum, valued at $180,000,000 was produced in the United States, more than 65 per cent of the total output of the world. However,the petroleum resources of this country are not unlimited, and the demand for gasoline and other products is bound to increase. It is estimated that, at even the present rate of consumption, the underground supply of oil will last only 27 years. Hence, methods by which the available supply of oil and gas may be recovered and utilized with greater efficiency should receive thorough study.

"Already the benefit of methods of drilling wells so as to prevent underground waste have been demonstrated in the Oklahoma fields where the department of the interior, working with State officials, has shown how the production of natural gas can be stabilized by practical methods of confining the gas within its original reservoir until the market conditions justify production. It is estimated that formerly less than 10 per cent of the available gas was utilized, whereas by proper development of the gas field it is safe to estimate that 80 per cent of the gas may be recovered.

"The proportion of recoverable oil left in the oil sands by present methods of production is estimated at 50 per cent. Work is needed to determine how a larger percentage can be recovered profitably.

"The cracking of oils and the production of gasoline and other valuable products from crude oil and the heavier distillates call for further study.. For this investigation a single-tube Rittman plant capable of treating oil in commercial quantities should be built, as experience has demonstrated the difficulty of developing improvements of the Rittman process when the bureau has to depend for results on the commercial refiners who are using it."

In its efforts to increase efficiency in the use of mineral fuels the bureau is studying the properties of these fuels and the methods of burning them in furnaces and gas producers.

The funds held by the government for its Indian wards is referred to especially in relation to the income derived by the Osage tribe from their oil lands.

New regulations have been prescribed to govern the leasing of oil and mineral lands in the Osage nation. Under these there has been paid to the Osage tribe $2,230,000 as a bonus for leases which provide in addition to this, for a royalty of one-eighth of the oil produce and $100 for each producing gas well. New leases for the gas wells were approved in May of this year, and it is estimated that the first year's royalty will amount to $700,000 as compared with $12,000 for the previous year.

Of the government oil lands in California and Wyoming the secrtary says:

"Substantial and material progress has been made with respect to the oil situation in California. Investigations have been completed in a large number of cases and proceedings directed involving over 15,000 acres. At the present time adverse proceedings are pending involving 20,000 acres; also judicial proceedings involving 168,000 acres to set aside railroad patents alleged to have been secured with the knowledge the oil deposits were contained in the land. In one of these the Elk Hills case a decision by the circuit court of appeals upheld the judgment of the lower court in favor of the United States.

"In Wyoming the oil situation has been carefully kept in hand, and judicial proceedings instituted on behalf of the government in two cases.

"Twenty-four oil contracts, under the act of August 25, 1914, were entered into providing for the disposal of oil produced from lands in the California and Wyoming oil fields, pending the final determination of the title thereto. The total number of such contracts made up to date is 33, and the amount of escrow deposits held thereunder is $419,174.36."

In reciting the activities of the bureau of mines during the past year Secretary Lane numerates the following among others:

"Obtained important data on the oil shales in the west and their value as future sources of petroleum.

"Demonstrated the practicability of the Rittman cracking process for making gasoline, benzene, & toluene. Several commercial plants using the process are in operation or process of erection, 19 companies having received licenses to manufacture gasoline and five to manufacture benzene-toluene by the Rittman process.

"Showed well drillers the advantages of using improved methods of protecting oil and gas sands and called attention to underground wastes; as a result millions of dollars' worth of oil and natural gas will be saved that otherwise would have been lost. The value of using mud-laden fluid in drilling and closing oil and gas wells was demonstrated by operations, and methods of flushing oil sands in order to recover a large proportion of the contained oil were investigated.

"Investigated the quality of different grades of gasoline marketed in the United States and their relative merits as motor fuel.

"Investigated a process for producing gasoline from

natural gas, by which the utilization of gas will be made more efficient and the output of gasoline will be increased.

"Studied methods and devices for controlling fires at oil and gas wells and for preventing losses in storing petroleum.

"Prepared maps showing the location of wells, storage tanks, and pipe lines of the producing oil and gas fields of the United States. These will be published in a forthcoming report."

In addition to the chemical investigations already mentioned, the bureau studied the composition and properties of mine gases and natural gas. The investigations included an absorption method of extracting gasoline from natural gas which, if generally applied will make possible the recovery of 100,000,000 gallons of gasoline from natural gas each year; the errors that may arise in commercial methods of measuring natural gas at high pressure; the perfecting of a gas detector for use in mines and other places; methods of gas analysis; the chlorination of natural gas with a view of making tetrachloride chloroform and other valuable products; and the fusibility of coal ash as related to the formation of clinker in fuel beds.

O'Neal Refining Process

J. M. O'Neal of Long Branch, Cal., where he is at the what is known as the Burton process is an infringement on his, and has brought suit for his protection. In a statement given out by him Mr. O'Neal says:

"I have invented a process by which practically all the oil is separated from the non-volatile residue and which produces a better quality of oil and leaves the residue free from the smell of char or burn. In many processes the severe heat causes particles of oil to be charred or burned and left with the residue asphaltum or tar. These particles of charred or burned oil are all waste. One object of this invention is to prevent this waste. My invention includes the old process of vaporizing the oil and then condensing the vapor thus formed; but I have invented new means for accoplishing this."

In condensed form the features of the O'Neal patent claims are stated to consist as follows:

1. In an apparatus for refining crude oil, comprising means for converting the volatile oil into vapor by heat, a receptacle for collecting and separating the vapor and the non-volatile matter, a condenser for converting the vapor back to oil, and means for forcing the vapor into a fluid in the condenser.

2. In an apparatus for refining crude oil provided with a furnace and pipe for conveying oil through the furnace; means for insulating said pipe, whereby the burning or scorching of the oil is prevented and heat is applied uniformly to said pipe as oil is passing through the furnace, whereby the volatile oil is converted into vapor, and means for collecting and condensing the vapor.

3. In an apparatus for refining crude oil provided with a furnace, a pipe for conveying oil through said furnace, and means for collecting and condensing the vapor; means for insulating said pipe in said furnace and means for distributing heat uniformly thereto, whereby oil is converted into vapor during its passage through said furnace without charring or scorching the oil, consisting of a pipe or tube mounted in said furnace and enclosing said oil pipe and means for forcing hot steam in tube or pipe about said oil pipe.

4. In an apparatus for refining oil provided with a furnace, a pipe for conveying oil through said furnace, and a means for collecting and condensing vapor; means for insulating said pipe in said furnace and distributing heat uniformly thereto, whereby the oil is converted to vapor during its passage through said furnace without charring or scorching the oil, consisting of a pipe or tube mounted in said furnace and having open communication with said furnace, said oil being coiled about said smaller pipe within the larger pipe or tube, said larger pipe or tube being closed about said smaller pipe, and means for applying hot steam to the coil of said oil pipe.

5. In an apparatus for refining crude oil provided with a furnace, an oil pipe for conveying oil through said furnace, and means for collecting and condensing the vapor: a closed tube or pipe for protecting said oil pipe in said furnace; insulation to protect said oil pipe between the walls of the furnace and the ends of said tube or pipe, and means for forcing hot steam or hot air in said closed tube or pipe.

6. In an apparatus for refining crude oil provided with a furnace, an oil pipe for conveying oil through said furnace, whereby the volatile oil is converted into; means for forcing the gas into a fluid or liquid and a condensor for condensing the vapor into oil.

7. In an apparatus for refining crude oil provided with means for converting volatile oil into vapor and a separator for collecting the vapor and the residue or non-volatile matter and separating the vapor therefrom; means for forcing the vapor into a liquid and a condensor consisting of a series of pipes of different diameters and connected at different angles.

8. In an apparatus for refining crude oil provided with means for converting the volatile oil into vapor and means for collecting the vapor and the involatile matter and separating the vapor therefrom; a pipe for conveying the vapor to a condensor, the condensor consisting of a series of pipes of different diameters connected together at different angles, and a receiver for collecting and separating the products of the condenser.

PIPE LINE TRAFFIC

Reports of the Eastern and Mid-Continent pipe lines on November traffic indicate that all the oil produced in the regions covered by the transportation companies is being run into the lines. The total receipts from the wells for all reporting divisions were 12,245,579 barrels, a daily average of 408,186, barrels which constitutes a new high record. The next highest average was in June when 408,081 barrels were run daily. The low average of the year was 329,261 barrels daily in January last.

The amount of oil held in storage by the pipe lines again showed a falling off, the Eastern lines losing 256,477 barrels and the Mid-Continent lines 385,200 barrels. Eastern lines at the close of the month held only 9,770,041 barrels, which was the lowest amount on hand since February, 1914.

California Derrick

The Oil Authority of the Pacific Coast

PUBLISHED MONTHLY
—BY—
The California Derrick Publishing Company
DR. CLARENCE E. EDWORDS .....Editor
E. L. MACKEY ..... Business Manager

OFFICES
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Subscription price, per year, $2.00 **Foreign $2.25**
Advertising Rates on Application
Entered as second-class matter February 17, 1912, at the postoffice at San Francisco, Cal., under the Act of March 3, 1879.

THE DERRICK'S CREED

The California Derrick has no axe to grind, no company to promote, no stocks to sell, no "interests" to bow to. Not dominated by any company, but faithful to California's Oil Industry.

CRUDE OIL RUNS AUTOMOBILE

C. J. Kerns, a field agent for the Federal Indian Service, has solved the problem of the high cost of gasoline according to a letter received from him recently at the local offices of the Indian service.

Kerns wrote that he invented a device which, when attached to the carburetor, enabled him to burn crude oil in his automobile in place of gasoline.

He stated that the invention had worked successfully on an inspection trip which he took through the state.

CRUDE OIL SITUATION IS STRONG

Expectations of a further advance of crude oil in Pennsylvania, possibly to $3, is strongly entertained by operators, and this will, in turn, affect the price of crude in the Mid-Western and California fields. Several advances in the price of crude in California have immediately followed advances in the Pennsylvania field, and as the eastern price continues to rise we may look for advances here. It is predicted by many operators and by machinery and supply men, that we will have "Dollar Oil" at the well in low grade crude by the first of March, if not sooner.

NEW DEALS SHOW ACTIVITY

Deals in oil lands in the west side fields at McKittrick have, of late, attracted much attention on account of the location of the properties figuring in the transactions, and the prominence of the parties to the trades, together with the prospective developments of the tracts acquired by purchase or lease.

The leading factors in the deals consummated were the Standard Oil Company and E. L. Doheny, of Los Angeles, the former securing control of the Fearless lease on the North McKittrick front; other properties further north in the same district, and the Eagle Creek and Mammoth leases in the Midway field.

CO-OPERATION IN DEVELOPMENT

Mining has always been classed the "poor man's game" but when it comes to development of oil wells it means big money. A man with a pick, shovel and pan, with enough food to carry him along for a while, can go out and find a mine that will make him rich, if he be fortunate enough to find the mine, but a prospector for oil needs large capital to get his oil after he locates it. It takes from $25,000 to $40,000 to sink a well and this means men of large means.

That the poor man may have a chance the only way oil can be developed is through a co-operative plan, whereby the investor joins in with a number of others and supplies his or her money in conjunction with a large number of others in the purchase of land and the sinking of the wells. This plan is being successfully worked in California and the investor at least knows that he is getting a show for his money, for he has no assessments to pay and stands a chance to make good money out of small investments.

REVIVING AN OLD PROJECT

In testifying recently before the house committee on naval affairs, Rear Admiral Frederick Harris, chief of the bureau of construction and repair, stated that plans have been made by the department for the underground storage of something over 50,000,000 gallons of fuel oil. "The European war," he said, "has proved that oil tanks above ground and in sight can be destroyed easily. There has been much criticism of the tanks above ground. We now propose to build storage places for oil in a manner to prevent then from being blown up by bombs." If these plans include a particular naval oil reserve which oil men have been suggesting to the oil department for several years, the fact has not been made public. We refer to the advocacy of a properly protected storage depot in Oklahoma, remote from coastal attack and available to be drawn upon or exchanged at the cost for lower grades of oil, through existing common carrier pipe lines, or through a governmental line if necessary. Had the government acted on this suggestion when first presented to it several years ago, it could now have safely stored there several millions of barrels of oil which, tankage and all, would now represent no cost to it whatsoever, considering the increased value of the oil The places announced for the new storage are Guantanamo, Pearl Harbor, Puget Sound, San Diego, Marc Island and Melville, R. I. An appropriation of $1,000,000 is asked in furtherance of the present plans.

WELLS INCREASE AND PRODUCTION DECREASES

Even though twenty new wells were completed in the Midway-Sunset district during December the production of 1,700 wells dropped more than the increase brought in by the new production. There were no big wells among the new producers, no gushers or flowing wells having been struck.

It is a well known fact that many of the old districts of the state are decreasing rapidly in their production, and this is causing new fields to be exploited all over the state. One of the most promising districts lies in the Carriso Plain country and from these westward toward the Parkfield district.

According to geologists and scouts for the big oil companies the coming field will be found in that district, and it is possible, if not extremely probable that San Luis Obispo County will take first rank among big

oil districts of the country. There is every indication of oil and all of the geological formations that are to be found in the McKittrick and Coalinga fields, and with the completion of the wells that have been started and are being contemplated in this district we believe that there will come a surprise for the oil men.

It will not be a surprise to many of the well posted oil men, however, for this district has been looked upon with favor for several years, but following their usual custom the big companies have neglected it with the idea of impressing property owners with the belief that their land was not oil bearing. The fact that a number of men are now in the Carriso and San Juan river district quietly getting options on land, is an indication that there is more known about this country than is given out. Several wells sunk four and five years ago were closed down rather mysteriously and so closely guarded that no one has been able to find out what was discovered by the drillers. There is no doubt in the minds of those conversant with the situation, that something big will be found in San Luis Obispo County.

LOOK OUT FOR FAKE STOCKS

Commissioner of Corporations of California has issued a warning to the public against a number of mining companies that are being incorporated in Arizona and flooding the country with glowing prospectus of great earnings to be made.

The boom in metals owing to the war is responsible for this sort of swindling, and it is known that a large number of fake companies have sprung into existence, taking names that resemble well known companies. The stock is being sold in California and is being extensively advertised and hawked about by good talkers.

The warning sent by Commissioner Carnahan is timely and the people who read it should be on their guard against outside stock companies whose only profits go to the promoters while the investors have nothing but assessments instead of dividends.

One of the great troubles with the investment field so far as the small investor is concerned, is that the mining and oil companies that are incorporated under outside laws, come here to sell their stocks and by their glowing stories induce unprotected investors to part with their small savings.

California companies operate under strictest regulation and when a company is authorized to do business by the Commissioner of Corporations it is a pretty sure bet that the company is on the level and the investors will have a good chance for their money. The regulations of California laws protect the small investor and the first question that should always be asked by the investor is whether or not the Corporations Commissioner has approved the company offering stock.

Oil development in California is being pushed with greater energy than ever before owing to the increased demand and lessened production, and as a result many companies are being formed to prospect new territory. Those who invest in these companies can do so only after stock has been approved by the Commissioner or after the stock has been issued to the original incorporators, who, in turn, sell it to help development, or to help their own pockets, as the case may be. If the Commissioner of Corporations has granted the permit to sell the stock it is safe, but if he has not, then the investor may be assured that the stock is not of a sort that should be bought.

There is always a temptation to form fake companies whenever there comes a time of big profits in any industry and this applies especially to mining and oil. California investors need have no fear of a California company that has been given permission to sell stock, but there is no law covering the sale of stock outside of companies. A good rule to follow is to deal solely with California companies and give the others no chance to take your money.

NAVY OPPOSES COMPROMISE

The joint commission appointed from the Navy, Justice and Interior departments and from the Senate and House public lands committee to settle, if possible, the fight between the navy department and the California oil men ousted from their claims under the Taft withdrawal order in 1909 over the terms of Phelan amendment of the Ferris leasing bill, which would give titles or lease to the oil claimants, has held its first session at the capitol. All of the conferees were present, as were a large array of representatives of the California claimants.

The navy department's side of the case was presented by the two representatives of the department on the joint commission, Assistant Secretary Roosevelt and Lieutenant Commander J. O. Richardson, U. S., who has charge of the fuel oil board in the navy department. Roosevelt made an extended argument, backed up with a long array of statistics and figures purporting to prove that all of the oil naval reserve No. 2, in which most of the ousted claimants held land, is needed for the navy. According to Roosevelt's figures, very little more oil ought to be taken out of any of the fields throughout the country, because, he claimed, it would all be eventually needed for naval ships. Richardson argued along similar lines.

Former Governor Gillet and Louis Titus, on behalf of the California producers, said that the Standard Oil Company and the Associated oil company would deed their claims to the government in reserve No. 1 if the naval department would cease its objection to the Phelan amendment. Gillet said that with the navy in undisputed possession of all of reserve No. 1, the government would have a tract of 38,000 acres of oil lands, which would supply the navy with all the oil it would need for many years. The Standard owns one section and the Associated three sections in reserve No. 1. The Geological survey, Gillett declared, has intimated there is enough oil in reserve No. 1 to supply the navy for forty years.

Much to the surprise of the oil claimants, Assistant Secretary Roosevelt flatly refused this offer. Roosevelt declared there is nearly twice as much oil in reserve No. 2, in which are located all of the small claims now in litigation with the government, as there is in reserve No. 1.

Gillett explained that if the government secured all of reserve No. 1 it would get more oil than if the Standard and Associated worked their wells in that reserve, as this would gradually exhaust the field. Roosevelt, however, said he would not agree to the proposition.

DEVELOPING ANTELOPE VALLEY

Reports at Coalinga are to the effect that to the south of the Antelope Valley, not far from the Antelope Hills, several new rigs are to be built. This is all wildcat territory and has been under consideration by oil men for some time. The report states that work is being done upon roads into the hills over which supplies are to be hauled to the new locations. Geologists said to be working under direction of eastern capitalists were working through this section last summer, and the present activity is said to be due to their reports.

Work of State Mining Bureau

The report of the State Mining Bureau covering oil field operations for the week ending December 30, 1916, shows eight new wells started drilling, twenty ready to test water shut-off, seven to deepen ore drill, and three to be abandoned.

During the year 1916 there were 759 new wells commenced or reported. The Bureau has kept no record of the number of wells completed, and probably the actual work on some of the wells reported was not promptly commenced, owing to such obstacles as increased cost of material and scarcity of labor. There was, however, a great increase of work over that done during 1915 when only about 240 wells were completed.

The witnessing of tests of water shut-off, coincident with the general field of activity amounted to 917 cases and constituted the major portion of the Bureau's work. Such tests are of utmost importance in protecting the oil fields, and the necessity of their being inspected by a disinterested public official is generally recognized and demanded, but the underlying principles governing the depth and manner of the shut-off is of even greater importance and depends upon careful engineering investigation. The drilling of a new well or the deepening or abandoning of an old well demands in every case an investigation, the full importance of which is not yet generally understood. The enlarged staff of the Bureau will doubtless make such primary work possible during the coming year. The upkeep of an oil property involves constant work on some old wells which have deteriorated or were not originally completed in the best manner. Such deepening and redrilling work was proposed by operators on 528 wells.

Wells are abandoned for several reasons, such as nonproductiveness, damage to surrounding property or salvage value of material in an idle well. Abandonments proposed during the year totaled 164.

The repairing of old wells, which are said to be damaging surrounding property, is a subject of importance of which is generally recognized and demanded by operators. The Bureau has the power to compel repair work at wells, and many owners of such wells are willing to make repairs without legal compulsion, but the Bureau has scarcely touched this branch of the work further than to demonstrate in a few cases that it is both possible and profitable. No repairs have been ordered or will, in the future, be ordered by the State Oil and Gas Supervisor until an investigation thoroughly demonstrates what wells are the real source of damage, and exactly what repair work is necessary. Any other procedure would cause needless and unjustified expense to the operators and eventually discredit all other branches of the work. Conditions during the coming year will undoubtedly be such as to provide for such investigations and repair.

A review of the year's work gives ample proof that the underlying principles of the Bureau's work are now better understood and appreciated by oil operators than before. Criticism for lax enforcement of some provisions of the law is answered by the statement that drastic action should only follow a thorough consideration of facts, and that most oil field operations have not in the past, been so conducted as to present even such simple facts as actual dates when water appeared in various wells, or the physical condition of the wells. The first drastic action in the enforcement of the law must be directed toward those who do not furnish the necessary facts such as complete well logs and production reports. A reasonable period of time for the explanation of the necessity of such records should, of course, be allowed. Such explanations were presented to every operator during the past year.

Work of Bureau Mines

Secretary of the Department of the Interior thus summarizes some of the things accomplished during 1916, by the Bureau of Mines, in connection with the oil and gas industries:

"Obtained important data on the oil shales in the west and their value as future sources of petroleum.

"Demonstrated the praticability of the Rittman cracking process for making gasoline, benzine and toluene. Several commercial plants using the process are in operation or process of erection, 19 companies having received licenses to manufacture gasoline and five to manufacture benzine-toluene by the Rittman process.

"Showed well drillers the advantages of using improved methods of protecting oil and gas sands and called attention to underground wastes; as a result millions of dollars' worth of oil and natural gas will be saved that otherwise would have been lost. The value of using mudladen fluid in drilling and closing oil and gas wells was demonstrated by operations, and methods of flushing oil sands in order to recover a large proportion of the contained oil were investigated.

"Investigated the quality of different grades of gasoline marketed in the United States and their relative merits as motor fuel.

"Investigated a process for producing gasoline from natural gas by which the utilization of gas will be made more efficient and the output of gasoline will be increased.

"Studied methods and devices for controlling fires at oil and gas wells and for preventing losses in storing petroleum.

"Prepared maps showing the location of wells, storage tanks and pipe lines of the producing oil and gas fields of the United States. These will be published in a forthcoming report."

Further progress has been made also in investigations of the character and composition of natural gases; gas measurements under high pressure; methods for the detection of gas in mines and other places, and the possibilities of utilizing natural gas for making chloroform and other valuable products.

The secretary strongly urges the provision of funds commensurate with the importance to the oil and gas industries and the public of continuing and broadening the department's investigating and conserving work.

"In the calendar year 1915," says the report, "more than 281,000,000 barrels of petroleum, valued at $180,000,000 was produced in the United States, more than

65 per cent of the total output of the world. However, the petroleum resources of this country are not unlimited, and the demand for gasoline and other products is bound to increase. It is estimated that, at even the present rate of consumption, the underground supply of oil will last only 27 years. Hence, methods by which the available supply of oil and gas may be recovered and utilized with greater efficiency should receive thorough study.

"Already the benefits of methods of drilling wells so as to prevent underground waste have been demonstrated in the Oklahoma fields where the department of the interior, working with state officials, has shown how the production of natural gas can be stabilized by practical methods of confining the gas within its original reservoir until market conditions justify production. It is estimated that formerly less than 10 per cent. of the available gas was utilized, whereas by proper development of the gas field it is safe to estimate that 80 per cent, of the gas may be recovered.

"The proportion of recoverable oil left in the oil sands by present methods of production is estimated at 50 per cent. Work is needed to determine how a large per centage can be recovered profitably.

"The cracking of oils and the production of gasoline and other valuable products from crude oil and the heavier distillates call for further study. For this investigation a single-tube Rittman plant capable of treating oil in commercial quantities should be built, as experience has demonstrated the difficulty of developing improvements of the Rittman process when the bureau has to depend for results on the commercial refiners who are using it."

GEOLOGY AND PETROEUM

The importance of the petroleum and gasoline industry to the United States, is being more widely recognized than ever before. Little attention was given it a few years ago by Government, while now it forms a base for investigations, scientific experiments, and is given special recognition by the United States Geological Survey. The Survey during the last two years has made greater efforts than ever before to assist in discovering and in developing new oil reserves. Brief accounts of the work accomplished, with titles of reports published or in preparation this year, describing the structure and oil prospects in many new and undeveloped areas, especially in the Western States, in the Southwest and in the Mid-Continent region, will be found in the record of the geologic work carried on in the several States. Even with all the funds which, with justice to other mineral interests, could be devoted to investigations of oil and gas, it has not been found possible to extend these researches at all in proportion to the increase in public demand for information both as to old and to new fields. A recent editorial in the Standard Oil Bulletin states: "Time was when oil operators were strongly inclined to give little or no heed to the opinion of geologists, but that time is past." The value of the studies of geologic structure in the search for oil is not only thus recognized by the great oil companies, but most of these corporations are now recruiting corps of geologists, if they had not already had trained geologists in their employ. Naturally the information thus acquired by these corporations for their guidance in leasing lands and in locating exploratory drill holes is not available to the public—a fact which makes more pressing the need of the landowner and of the small independent driller for the information which the Federal or State surveys can give.

One of the recent suggestions of the Geological Survey, is that some day the advancing cost of gasoline and other products of petroleum, or their scarcity, may make it commercially profitable to utilize some of the enormous supply of petroleum to be derived from the distillation of the vast deposits of so-called hydrocarbon shales of the Green River formation of northwestern Colorado and northwestern Utah. The survey has for three years been making field investigations of these deposits. The examinations have been accompanied by mapping of the areas of hydrocarbon shales and by such field measurements of the thickness of the shales in workable beds and of such rude field distillation tests as will afford primary information concerning the amount and richness of the shales in different parts of the region.

Very rough but cautious calculations of the contents of the shale in parts of the area examined indicate that the distillation of shale from beds over three feet thick in Colorado alone will yield more than 20,000,000,000 barrels of crude oil, from which more than 2,000,000,000 barrels of gasoline can be extracted by ordinary methods. A report giving the results of these explorations and tests and an account of experiments as to possible gasoline production, both by the ordinary commercial processes and by the Rittman process, is now in press.

STANDARD OIL'S NEW PRESIDENT

Word has been received from New York that Alfred C. Bedford has been chosen president of the Standard Oil Company, succeeding the late John D. Archibold. Bedford has been vice-president and treasurer for a number of years and has been acting head of the company since the death of Mr. Archbold.

FRESNO FLYER

From

San Francisco
(Ferry Station)
4:40 P. M.

Arrives

FRESNO
9:55 P. M.

Through Orchards and Vineyards—
Beautiful Niles Canyon—
Fertile Livermore Valley—
and the
Valley of San Joaquin.

OBSERVATION
PARLOR CAR.
RECLINING
CHAIR CAR.
DINING CAR.

7 Additional Trains.

SOUTHERN PACIFIC

Write for Folder on the Apache Trail of Arizona

ROUMANIAN OIL WORKS DESTROYED

A British military mission in Roumania destroyed Roumanian oil fields valued at $150,000,000 before that territory fell into German hands, W. W. Rutherford, a member of Parliament, announced at a general meeting on the Roumanian Consolidated Oil Fields Companies recently. He said the property and stock obtained by the Germans was valueless.

GASOLINE SUPPLY GRAVE PROBLEM

A note of alarm concerning the gasoline supply of the country was sounded at the convention of the Society of Agricultural Engineers in Chicago recently by Dr. Oscar E. Brandsky of the Standard Oil Company.

He declared that production was not keeping pace with consumption and that exhaustion of the supply was drawing near. The tension was relieved, however, when it was calculated that the estimated remaining supply of crude oil, visible and invisible, 7,629,000,000 barrels in all, would last for 138 years at the 1916 rate of consumption of 55,000,000 barrels.

Dr. Brandsky said that next year there would be 3,000,000 automobiles in operation in the United States, or 750,000 more than this year. He estimated that eastern oil fields are 75 per cent exhausted; mid-continental fields 50 per cent; Texas fields 80 per cent and the California fields 35 per cent exhausted.

THE REIGN OF OIL

The European war is without a doubt doing more to direct general attention to the claims of oil and its multitudinous products than any amount of advertising in normal times could have accomplished.

The great clash of arms on the continent has, from its commencement shown that the necessity for the products of petroleum in up-to-date warfare is no less than in either the industrial circles or in domestic life. We are today as much dependent upon the refined products of crude oil as we are upon wheat and other necessities of life, and as time goes on, and the uses which are constantly being found for petroleum multiply, our dependency upon oil becomes the greater.

It is no surprise, therefore, to find that not only the petroleum products generally commanding greater attention than ever they did before, but that a particularly healthy atmosphere permeates those enterprises which have laid themselves out—and successfully so—to engage in the production, the refining, the transport, or the distribution of petroleum products. There is, in short, no mistaking the fact that in the future, oil will be king.—London Petroleum Review.

RAILROADS LOOK FOR OIL

That the Southern Pacific and the Santa Fe, the great trans-continental railway systems that have for many years been prominent in the production and use of oil for fuel, are planning to greatly increase the boundaries and activities of the fields wherein subsidiary petroleum companies are operating, is indicated by the beginning of important new development in the Kern county districts.

Under the control of the Southern Pacific and entering new territory and one which during the past year has made most remarkable strides and is rapidly becoming one of the leading areas in the oil belt on the west side of this county—the North McKittrick front—the Kern Trading & Oil Company, one of the largest producing operators in the state will, within a few days commence work in section 1, 30-21, section 5, 30-21 and section 31.

The recent invasion of the North McKittrick front by the Standard Oil Company, to be followed by that of the Kern Trading and Oil Company, presages early initial work on the part of other concerns both large and small.

The Santa Fe, which on the properties known as the Chanslor-Canfield Midway Company, in the Midway neld has more than one hundred wells, is beginning the new year program of bigger development by drilling the first of eleven wells to be sunk there. Two are to be drilled in section 1, 32-22; four in section 31, 31-23; and six in section 36, 31-22. The Santa Fe put down four wells in this field in December. This corporation owns extensive properties in the Kern River and Fullerton fields and, like the Southern Pacific, uses enormous quantities of oil on the different lines under its control. The railroad organizations are no doubt the largest consumers of California fuel oil, and the total amount shows a decided increase each year.

McKITTRICK CLAIMS PRODUCTION RECORD

Whether the McKittrick oil field, the oldest in the west side of Kern county, the first real development being in 1892, since which time it has produced 50,000,000 barrels, will this year, for the second successive year, hold the record of yielding more petroleum per acre than any other district in California, cannot be definitely established until the figures for the twelve months now nearly closed are made public, yet it promises well to retain this distinction.

At the commencement of this year the proven acreage of the McKittrick field was 1345. The total production to December 31, 1915, was 45,631,573 barrels and the total number of barrels yielded per acre to the same date was 33,930. When the windstorms of January 17, 1915, which leveled 470 rigs in the McKittrick Midway and Sunset districts, necessarily caused a lessening of producting in these fields, and the storm which on January 27 swept over the McKittrick, Belridge, Lost Hills, Midway, Sunset, Coalinga and Kern River areas, destroying 1400 derricks greatly augmented the losses in production. During the present year, however, the completion of new wells on the leases of the Associated, Kern Trading & Oil, Berry & Keller, San Francisco & McKittrick, Jackson, East Puente and the Reward oil companies in the McKittrick field, and the redrilling of other wells on some of the properties of these concerns, with good results in most cases, has added considerably to the total output of the district, and aided materially in establishing the claim of the McKittrick field as to superiority in the matter of production per acre in the state.

From a historical point of view it is interesting to know that, from the most dependable records, the total yield of the McKittrick field in the year 1898 was 10,000 barrels, these figures mounting gradually until in 1903 they reached 1,353,000 barrels. From this production there was a drop of 680,000 barrels in 1906, but the following twelve months showed a remarkable increase, the output being 2,415,000. Still more interesting is the record for the year 1909, this showing 5,800,000 barrels. The 5,000,000 mark was maintained during the succeeding three years, but the following year exhibited a decrease of 800,000 barrels. For 1915 the production was 3,552,801 barrels. In January last the price of oil for 14 gravity and up to and including 17.9 gravity was 48 cents It is now 73 cents per barrel.

LOOK FOR BIG GASOLINE EXPORTS

Basing deductions on the present demand for gasoline, and he rapidly increasing number of motor vehicles together that the domestic consumption is far above production of gasoline, manufacturers are looking forward to an enormous export business as soon as the war is over. It is claimed that it will take several years before conditions in Europe will permit the use of the oil fields of Rumania and Russia and the manufacture of gasoline there, owing to the necessity of getting other conditions back to the normal, consequently all of the gasoline supply must come from the United States and Mexican fields.

INCREASED PRODUCTION OF CRUDE

Preliminary estimates by John D. Northrop, of the United States Geological Survey, Department of the Interior, indicate that the quantity of crude petroleum produced and marketed in the oil fields of the United States in 1916 was 292,300,000 barrels. This quantity is greater by 4 per cent than the corresponding output in 1915, which reached the record-breaking total of 281,-104,104 barrels. Mr. Northrop estimates that 38 per cent of the 1916 total came from the Oklahoma-Kansas field, 30 per cent from California, and the remaining 32 per cent from the Appalachian, Lima-Indiana, Illinois, North Texas, North Louisiana, Gulf Coast and Rocky Mountain fields.

IN CALIFORNIA MINES

The Poorman gravel mining claim, owned by George Lamb, and under bond to Erickson, Hanson and Nelson, near Angels, Cal., is attracting much attention owing to the fact that the lessees are rapidly approaching the famous old McElroy gravel mine which yielded to its early day owners hundreds of thousands of dollars.

Sinking the main shaft of the Original Amador mine to a depth of 1,500 feet has begun. Developments on the 850 foot level have been especially satisfactory, proving the ore of much better grade than that on the upper levels. Late work indicates that the best will be found at greater depths.

A dividend of 5 cents per share, aggregating $125,000, has been declared on the capital stock of the North Star mine, at Grass Valley, which is capitalized at $2,500,000. This dividend makes the total dividends paid by this company since it began operating to more than four million dollars.

The Mountain Copper Company has 400 men on its payroll, and besides shipping heavily to its smelter at Martinez, it is treating large quantities of low grade ore in its Minnesota flotation plant near Keswick.

The Mountain Copper Company is doubling its Minnesota plant. The present capacity is 250 tons a day.

After an idleness extending over two years the Ely Consolidated Copper Company, at Reno, announces that arrangements have been made for ample capital, and work will be resumed in January.

The Manga King Copper Company has been incorporated at Phoenix, Ariz, capitalized at $1,500,000.

The Horn Silver Mining Company has incorporated at Phoenix, Ariz., capitalized at $150,000.

The Silver Gable Mining and Milling Company has incorporated at Spokane, Wash., with a capitalization of $200,000.

The expenditure of $100,000 is contemplated in development by the Azurite Copper Company, in Washington.

Guaranteed

The Standard Oil Company stands squarely behind Zerolene and guarantees it the *best* automobile oil they know how to make.

ZEROLENE

the Standard Oil for Motor Cars

Sold by dealers everywhere and at all Service Stations of the Standard Oil Company (California)

SERVICE ROOM FOR REFINERY

The Warren, Pa. Mirror has the following to say about an innovation in one of the plants after Union Petroleum Company:

"In keeping with a movement which is gaining popularity with manufacturers all over the country, the Wellsville Refining Company, of which J. C. Kuebler, formerly of this city and well known among oil men and refinery operators here, is superintendent, has just completed a building 24x64 feet as a general service building for its employees. The structure is of brick with cement floors and cement walls, finished with enamel paint; it has a dining room 22 by 26 feet, which is fitted with two large tables, to seat twenty men at each table, bubble drinking fountain, coffee percolator, steam radiators, chairs and electric lights. It is the intention of the company to furnish its employes with hot coffee free at noon during the cold months.

"The next room has 48 steel lockers for the men with chairs, steam radiators and electric lights; off on one side of this room is fitted up an emergency hospital room with white enamel bed, table, chair, radiator, hot and cold water, lavatory, also private toilet, medical cabinet and stretcher all for emergency use. In the fitting up of this room it is intended that if any of the employees should sustain serious injuries, the employee could be kept in this room with complete comfort and safety until able to be moved to his home.

"Off from the other side of the locker room is a wash room fitted with a long wash trough, hot and cold water, for the men to wash over; also in this room are three shower baths for the employees, which are ready for use night or day with sufficient hot and cold water; off from the wash room is the toilet room fitted with three urinals and three toilets, also lavatory, steam heat and electric light.

"The innovation is one that will prove a great benefit to the employees and will be thoroughly appreciated by them. Superintendent Kuebler is to be highly commended upon his careful provision for the comfort of the men in his employ. The Wellsville Refining Company is probably the first in this section to start a service room of this kind in their plant, although others have contemplated such a move. The eyes of the refinery operators in Warren and elsewhere will be turned upon that plant to ascertain how the innovation works out before it is tried elsewhere.

OIL STOCK ASSESSMENTS

The following oil companies have levied assessments upon their outstanding capitalization.

Providential Oil Company, two cents per share; Ventura-Pacific Oil Company, one cent per share; Balboa Oil Company, one-quarter cent per share; Fullerton Great West Oil Company, two cents per share; Knickerbocker Oil Company, one cent per share; Marathon Oil Company, ten cents per share; March Oil Company, two cents per share; Palmer Annex Oil Company, one and one-half cents per share; Alberta Midway Oil Company, ten cents per share; Mogul Oil Company, one-half cent per share; Blue Diamond Oil Company, one- and one-half cents per share; Kramer Consolidated Oil Company, one-half cent per share.

BIG COMPANIES IN NEW DISTRICT

Leasing of lands on a royalty basis from Rockpile, a small district twenty miles south of Bakersfield, north to Kern river, being done by the Union and Associated Oil Companies, according to report there. It is said wells will be drilled, the belief being that oil measures in paying quantities will be found in the lands just at the base of the foothills. Territory south of Rockpile also has been prospected for oil and from Rockpile south to the Tejon canyon, which territory would include a portion of the Otis-Chandler (Tejon) Ranch, there are said to be oil indications.

Some months ago seepages of oil were encountered in a water well drilled for Mayor George Hay near Edison, and a similar showing was foundintheE. W. McCutcheon well south of Edison.

Some of the most recent drilling has been done by the Associated on the plains north of Bakersfield in the vicinity of Lerdo. One well is known to be down more than 2500 feet in the foothills east of Lerdo.

The Pacific Electric interests, headed by Paul Shoup, are reported to be preparing to drill on two sections recently leased by them from John Enas, in the vicinity of Poso creek, some eighteen miles north of Bakersfield. The Kern river oil fields lie north of the city, and the furthest well out is considerably less than eighteen miles from Bakersfield. It has often been said that the oil belt extended into Poso creek district.

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Oil Industry During 1916

In many respects 1916 has been the most remarkable year in the history of that period of the oil industry which dates from the dissolution of the old Standard Oil Co. at the close of 1911. The raw material of the industry has sold at the highest levels ever attained since regular markets were established, and the same may be said of refined products. The price range for the Eastern and Mid-Continent market for the last three years shows the following comparison:

PENNSYLVANIA CRUDE: 1916, High $2.75, Low $2.25, Average $2.50 1-2; 191[illegible] High $2.25, Low $1.35, Average $1.59 3-4; 1914, High $2.50, Low $1.45, Average $1.89.

OKLAHOMA CRUDE: 1916, High $1.55, Low $.90, Average $1.26; 1915, High $1.20, Low $.40, Average $.56 3-5; 1914, High $1.05, Low $.55, Average $.77 3-4.

Similarly gasoline prices, owing to ever-increasing demand for automobile consumption, reached their high record price during the last year. A comparison of wholesale prices at New York for the past six years shows the following:

	High	Low
1916	24c	21c
1915	21c	12c
1914	16c	12c
1913	17c	16c
1912	16c	9c
1911	11c	9c

Lubricating oil and paraffin also sold to record high levels, while the consumption of these products reached an unprecedented volume. There has been an excess supply of natural gas and the rising cost of coal caused a sharp advance in the fuel oil market.

Refiners experience a most profitable year and the expansion in refinery capacity, through the reinvestment of surplus profits in added equipment has been one of the outstanding features of the year. Standard Oil Co. of New Jersey, Standard Oil Co. of Kansas and Solar Refining made extensive installations during the year for the manufacture of gasoline by the Burton process. Continental Oil Co. entered the refining business by purchasing the plant of the United Oil Co. at Florence, Colo., and is spending $250,000 in modernizing it. Standard Oil Co. of Kentucky also announced that it would build a $1,000,000 refinery at Louisville, and Standard Oil of Kansas changed its charter to permit it to produce oil and build pipe lines.

Cash and stock dividends declared during the year do not call for extended comment, but it is notable that three companies—Ohio Oil, South Penn Oil and Standard of Kentucky—already have announced capital increases through stock dividend to be distributed early in 1917, and one of these—Standard of Kentucky—by giving a line on its surplus reveals earnings at the rate of 70 per cent in the current year against 34.4 per cent last year. This clear gain of 100 per cent in earnings is indicative of the unusual prosperity of most companies in the Standard group have enjoyed during the year and presages the probability of further stock increases during 1917, as an outcome of the present year's profitable operation—Pforzheimer.

Government Bureau on Gasoline

In a statement recently given out by the United States Bureau of Standards effort is made to correct two erroneous opinions generally held by the public regarding motor fuel. According to the report, specific gravity is practically worthless as a check on gasoline when it is desired to gauge its value for use in motor cars. Just what is the proper test is still a matter of some doubt, and in this regard the report states:

"It seems most probable that the definition of gasoline will have to be based on the percentage that distils over between specified temperatures, when the distillation is carried out under specified conditions. This distillation test, speaking in non-technical terms, is a measure of the freedom with which the gasoline will vaporize. The gasoline must not vaporize too freely for two reasons—one that it would not be safe, and secondly, its loss in storage by evaporation would be too great. Hence, the specification may have to contain limitations of the percentage distilling over below a certain temperature, coupled, perhaps, with a proviso that certain percentages shall distil over below other fixed temperatures, in order that requisite amounts of low-boiling constituents shall be present to insure starting of an engine. Likewise the specification must contain a provision that all must distil over below a certain maximum temperature in order to exclude from the gasoline the heavier petroleum distillates, such as kerosene."

The report also informs the public that it must not expect the Bureau of Standards to take hasty action in formulating a gasoline test. It says:

"It is extremely important that we proceed with the greatest caution and in the light of the fullest technical information. There is only one way, or at most a very few ways, of doing the right thing, while there is an infinite number of ways of doing the wrong thing. A mistake any kind, such as a specification that is unnecessarily restricted and which might unduly limit competition, will disturb economic and manufacturing conditions, and might only result in imposing greater burdens on the consuming public.

"There are two aspects to the question under consideration, one local, the other national. There is no doubt that the advantages that would result from a satisfactory standardization of gasoline by the National Government are many. Not the least of these would be its influence on state and municipal legislation relating to this question, and its effect in making such legislation more nearly uniform throughout the country. Legislative bodies are beginning to take up this question, and much of this legislation is certain to be ill-advised, although enacted with the best intentions, because it can not in the nature of things receive the careful consideration of technical experts that is required for the satisfactory solution of questions of this kind. It will be readily seen that the effect of indiscriminate legislation might produce conditions nothing short of chaotic.

EASTERN OIL PRICES ADVANCING

The past month has seen advances in practically all grades of eastern oils, the figures ranging up to as high as 30 cents per barrel for Mid-Continent oils. On December 2nd all grades of Caddo and De Soto crude advanced 10 cents per barrel, while on the 4th Crichton advanced 10 cents per barrel. On December 5th Pennsylvania grade was advanced 15 cents to the high point of $2.75 per barrel. At the same time Mercer Black and Corning advanced 10 cents and Cabell Somerset and Ragland advanced 5 cents per barrel each.

On December 12th Kansas and Oklahoma grade advanced 10 cents following a previous advance of like amount and a few days later another advance of 10 cents was recorded, making the present price $1.20 per barrel. The same figures apply to Yale, Corsicana light, Electra, Henrietta, Thrall, Strawn, Moran and Caddo 38. On December 13th the Indian oils advanced 5 cents and Plymouth 10 cents, while Corsicana heavy and Healdton advanced 5 cents each.

The falling off in the production and the great demand for refining oils is likely to cause further advances in the very near future, which doubtless will result in increasing drilling activities.

CALIFORNIA'S OIL VS. GOLD

The development of the oil industry in California during the last 20 years has been extraordinary. As a source of new wealth to the state and nation, California's oil production has rivaled California's gold. But the importance of petroleum and its products is by no means measured by their money value. Their highest value is in their potential uses. As a factor in the development of the industries and civilization of the Pacific Coast, South America, Australia and the Orient, no other products take precedence over petroleum. And oil is particularly important to the commerce of the coast. Thus while California is a natural gateway for commerce of the Orient, in its oil shipments to China and Australia California figures not only as a transportation base, but as a main source of supply. Petroleum case goods exports from San Francisco have grown from 50,000 cases for the first six months of 1913 to 850,000 cases for the first six months of 1916. This astonishing fact is partly accounted for by the closing of European tonnage for bulk shipments. But a real meaning of the increase is the awakening of the Orient to the uses of oil and its products. Cheap fuel, distillates, gasoline and lubricants from California are a powerful influence in the opening of the industries of China and other oversea countries. Alaska illustrates how these products stimulate the development of new countries. In 1915 Alaska's exports were $60,000,000. Forty per cent of these were the products of fishing industries. Of the remainder about 50 per cent. was gold and copper. In all of them California oil played its necessary part. Fuel oil is used in the operation of mines and canneries, kerosene for lighting, heating and cooking; engine distillate and gasoline for small craft and short engines. As an aid to distribution the Standard Oil Company (California) maintains in Alaska a central base of supply and numerous smaller distributing stations.

Commerce has long been recognized by statesmen and economists as the greatest of all civilizing agents. As a harbinger of civilizing influences, oil yields to no other product. No phase of our foreign trade has a greater future than that which deals with petroleum and its products. The consumption of crude and refined oil in itself implies constructive development. Therefore, with an increase in supply will come the increase in demand. As the Orient becomes more and more educated in the uses of petroleum, its value as an import, and therefore as an export, will grow in proportion.

The future of the oil industry is as bright as it is important. It will not only tend to cement our commercial relations with our Oriental neighbors, but will be a constantly increasing source of wealth for our state and the whole Pacific Coast. It is an industry constructive in its very phase, practically limitless in its commercial possibilities.—Standard Oil (Cal.) Bulletin.

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CALIFORNIA CONCENTRATES

The Combined Oil Company, of the old Belgian is soon to start drilling fifteen new wells near Bakersfield.

The Standard Oil Company is to begin drilling two new wells on section 16, 32-24, and two in section 36, 21-33, McKittrick field.

Preparations are being made by the Jewett Oil Company to begin development work this months near McKittrick.

The Wyoming Western Oil Company has been incorporated at Seattle. It is capitalized at $100,000 with Frank W. Hall, William Martin and F. E. Brightman as incorporators.

The Caltrone Oil Company of Los Angeles, has incorporated with a capitalization of $8,000. R. L. Dandson, William R. Schmidt, John W. Cooke, H. P. Cortelyou and A. E. Milliken are the incorporators.

Operations are being continued on the well three miles east of San Joaquin. A depth of 2,600 feet has been reached and a strong flow of gas has been encountered. Drilling has been in blue clay for a considerable depth.

The Pacific Oil Company of Reno, Nevada and South San Francisco, Cal., has incorporated with a capitalization of $500,000. The incorporators are G. R. Baeur, Hugh F. McNennis, John Dahl, Oscar Vansdaft, William C. Wolf, Rasmus Carlson, Sam Curusis, Edward E. Fisher and William Polluck, all of South San Francisco.

The Pacific Gasoline Company has completed the work of removing its plant down off the Birch Hill, near Brea, and it is understood that the Borch Hill Company will drill a well on the ground now occupied by the gasoline company.

FOREGO MARKET, OR DRILL

Estimates based upon field statistics covering eleven months of the year indicate that California will have on hand at the end of 1916 practically 12,000,000 barrels less oil than were in storage at the beginning. This is an alarming situation to confront, but there is a worse feature namely, that the decrease per month has now mounted to nearly 1,600,000 barrels and if that continues during 1917, stocks will be depleted by over 19,000,000. That is to say, there will be on hand but 26,000,000 barrels, or less than three month's supply.

There are two alternatives the operators of California have to face at the present time, in view of the disappearance of the oil reserve, an emphatic increase in drilling activity, or the giving up of a portion of the market. To give up a portion of the market would seem to do business, to draw in and make smaller the world to restrict opportunity voluntarily, to narrow the chance that California oil inhabits, already little and too pinched for a big success, to render useless many ships and facilities that have cost large sums of money and that may be needed again at any time. Oil history is a series of recorded emergencies. If there is any way to prevent it, no portion of the oil market must be given up.

Drilling is the one recourse out of the dilemma the business is soon to find itself in. This does not mean wildcatting, which may or may not develop new sources of supply. The chances are against that. It does mean that all companies should put down a well or more, the number conforming to the size of the operator. The cost of drilling has risen tremendously, to be sure, but the price of oil is at a figure never before quoted and there is little liklihood of its falling, and no producer can make money out of oil unless he has the oil to sell. Unless drilling is again actively prosecuted, the fields will be unable to provide what is wanted, at any price.

It may be said that to resume drilling on an extensive scale will have a tendency to reduce prices by bringing in more oil than is justified. That may be true, but it is equally true that if any portion of the market is given up, the same effect will be in evidence. Were a particular district thrown over, all the oil now going to that district, would be cast back upon other markets and, to all intents and purposes, there would be an over-production. The matter is as broad as it is long in that respect.

Drill for oil, and have it to sell.—Oil World.

OIL OUTPUT INCREASED

Preliminary estimates by John D. Northrop, of the United States Geological Survey, Department of the Interior, indicate that the quantity of crude petroleum produced and marketed in the oil fields of the United States was 292,300,000 barrels. This quantity is greater by 4 per cent than the corresponding output in 1915, which reached the record-breaking total of 281,104,104 barrels. Mr. Northrop estimates that 38 per cent of the 1916 total came from the Oklahoma-Kansas field, 30 per cent from California, and the remaining 32 per cent from the Appalachian, Lima-Indiana, Illinois, north Texas, north Louisiana, Gulf coast, and Rocky Mountain fields.

FREIGHT RATES ON OIL REDUCED

Effective February 1, 1917, the Interstate Commerce Commission has ordered a reduction of freight rates from producing points in California, Kansas and Texas to points in Arizona.

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NEW OIL VENTURE

Another company will drill in the Ventura district. It has been announced that a corporation headed by Floyd J. Holmes, of Petrolia, Texas, now operating in Oklahoma and Mexico, has bought a lease of 80 acres near Sea Cliff, from J. B. Fox. Operations on the property are to begin soon.

STANDARD AGAIN INCREASES WAGES

For the second time during the year 1916 the Standard Oil Company of California announced an increase in the wage scale, effective on January 1, 1917. The new scale increases by 5 per cent the wages of all employees receiving not to exceed $250 a month, with the minimum wage of $3 a day for unskilled labor. Between 9,000 and 10,000 employees will be benefited by this new wage scale, which is made by the company on account of the increased cost of living.

STANDARD OIL COMPANY

The annual meeting of the stockholders of the Standard Oil Company of California will be held in Richmond on Thursday, March 8, at 10 a. m.

Stockholders of record on the books of the corporation at San Francisco, Cal., at close of business February 26, will be entitled to vote at said election. No stock will be transferred at the New York transfer office of the corporation after the close of business February 15, 1917, until the opening of business March 9.

NEW WELLS IN LOST HILLS

Dudley & Dudley and the Security Oil Company have brought in wells recently extending the boundary of the Lost Hills field by about three miles. The Security Company has brought in a shallow well with a production of about fifty barrels a day, on section 24, 26-20, which widens the field at that point.

Dudley & Dudley completed a well at 1,382 feet, that came in with a flow of 100 barrels a day, and continued at that rate until the flow was checked to permit of cementing. This well is located on section 3, 26-20. Its product is 16 degrees gravity.

STANDARD TO DRILL AT BELLRIDGE

Contracting to drill a well on each of fifteen forty acre tracts, work to begin within ninety days, the Standard Oil Company has leased for a term of twenty years, at one-seventh royalty, from the Miller & Lux Company 640 acres on the North McKittrick front. Under the lease contract the Standard Oil Company has the right to drill 150 wells, ten on each of the fifteen tracts. The lands thus acquired lie from seven to eight miles northwest of McKittrick and contiguous to the Belridge field. It is over toward the Carriso Plain Country in San Louis Obispo county.

NEW BARNESON COMPANY

Captain John Barneson and associates have organized the Marina Oil Company under California laws, with an authorized capitalization of $200,000, in dollar shares The company has secured control of 160 acres consisting of the southwest quarter of section 3-29-21 McKittrick Front district, and already work has started on the drilling of three wells. This quarter section lies immediately south of the General Petroleum Corporation's developed property in the north half of the same section and good shallow wells are expected to be developed. The office of the Marina Company is in the Alaska Commercial Building, San Francisco, and the incorporators are W. C. Tupper, Virgil Shaw, W. J. Dinsmore, Leslie Barneson and M. Cyme, all of San Francisco.

LARGE REFINERY FOR THE UNION OIL CO.

Presaging the construction of the largest oil industry on the Pacific Coast at the Los Angeles harbor, negotiations of the Union Oil Company for the purchase of 160 acres of land have been completed, it is announced. The big tract lies at the northeast corner of the west basin of the Los Angeles harbor and was purchased at the price of $750,000.

In addition to the construction of the refinery the Union Oil Co., will dredge a channel about 500 feet wide, extending from the tract to the main channel. Large docks and wharves will be erected.

MIDAS DIRECTORS WIN SUIT

Judge Fitzgerald, of Vallejo, Cal., has decided for the defendants in the suit of Leroy G. Harvey against the directors of the Midas Petroleum Company. Harvey sued in the Superior Court some time ago for $6,000 and lost his suit, then he sued the six directors individually in a justice court for $300 each, and he has also lost this suit.

GASOLINE IN ENGLAND

Despite the abnormal conditions prevailing in the shipping circles Great Britain has been able to import more gasoline during the first ten months of this year than in any other similar period. From 103,000,000 gallons in the first ten months of 1914, and 120,000,000 gallons for the 1915 period, the amount imported by England in the ten months of this year reached 140,000,000 gallons in round numbers. This makes a new high record for this article in English commerce.

Another important feature of the imports is that the United States leads in the gasoline trade for this year, while in 1915 the greater amount was obtained from the Far East. Thus in the 1915 period the Far East furnished 55,000,000 gallons and the United States 53,000,000. This year the United States supplied 69,500,000 gallons and the Far East 61,000,000. Mexico showed an increasing quantity, the amount being 8,700,000 gallons for the first ten months of 1916, a gain of 1,000,000 gallons. During November the average imports of gasoline increased, and a larger amount was obtained from Mexico than during any other month of the year. The trade journals claim that England's position as to the gasoline supply is now very favorable, and there is no fear of any lack of the article for war purposes, while the domestic situation has greatly improved.

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Vol. X SAN FRANCISCO, FEBRUARY, 1917 No. 6

1916 A Record-Breaking Year

That 1916 was a record breaking year for the petroleum industry of the United States is indicated in a preliminary estimate of the output of crude oil made by John D. Northrop, of the United States Geological Survey of the department of Interior.

Mr. Northrop estimates that during the year closed 292,300,000 barrels of crude petroleum were produced and marketed in the oil fields of this country. This quantity is greater by 11,000,000 barrels, or 4 per cent, than the output in 1915. In addition to the quantity of oil produced and marketed in 1916, several million barrels were produced and placed in temporary field storage in Kansas and Oklahoma.

The following table shows by states the marketed production of petroleum in 1915 and an estimate of the production in 1916, in barrels of 42 gallons each:

State	1915	1916
Oklahoma	97,915,243	105,000,000
California	86,591,535	89,000,000
Texas	17,467,598	26,000,000
Illinois	19,041,695	16,500,000
Louisiana	18,191,539	15,800,000
West Virginia	9,264,798	8,500,000
Pennsylvania	7,838,705	8,000,000
Ohio	7,825,323	7,400,000
Kansas	2,823,487	6,500,000
Wyoming-Montana	4,245,525	6,300,000
Kentucky	437,274	1,200,000
Indiana	875,758	1,000,000
New York	887,778	900,000
Colorado	208,475	190,000
Other States	14,265	10,000
	281,104,104	292,300,000

The increase in 1916 is accounted for by the continued ability of the newer fields in the Mid-continent and Rocky Mountain regions to supply enough oil from new wells to more than offset the normal decline to the older fields east of the Mississippi.

The incentives that caused the increase in 1916 include higher prices for crude oil at the wells, which encouraged drilling in all fields; a decrease in production in the Cushing pool, Oklahoma, which allowed the product of other mid-continent fields access to markets; and a greatly increased demand for crude oil, expressing the needs of a large number of new refineries that were installed during the period of over production and low prices in 1914 and 1915.

The principal centers of increased production in 1916 were in Estill and Allen counties, Ky., Butler County, Kansas, Carter County, Okl., and Converse, Park and Natrona Counties, Wyoming.

Prices of crude petroleum at the wells averaged considerably higher in 1916 than in 1915. The upward tendency of the market inherited from 1915, persisted, with steady advances in the prices of practically every type of high grade oil, until March, when relative stability at high levels was attained. In this period Pennsylvania grade advanced from $2.25 to $2.60 a barrel and Oklahoma-Kansas grade from $1.20 to $1.55 a barrel, and the product of the Cushing pool commanded a premium of 50 to 60 cents above the price last quoted. Except for reductions of little significance in the price of one of the low-grade crude oils produced in northern Louisiana, in June, and in the premiums for Cushing oil, these high prices were maintained until the middle of July, when, led by all northern Louisiana grades on the 15th and followed by Oklahoma-Kansas grade on the 24th and by Pennsylvania and associated grades on the 29th, a retrogressive movement was begun, which lasted until late in August and reduced the price of Oklahoma-Kansas grade to 90 cents a barrel, practically eliminated the Cushing premium, and brought Pennsylvania grade to $2.30 a barrel. This depression in the prices of crude oil was centered in the Mid-Continent fields, where, subsequent to the decline of Cushing field, generally activity in the old pools and in newly discovered extensions had been attained with success so great as to bring about overproduction. The prompt curtailment of production in the more prolific newer fields prevented further reduction in price, and the features of the closing months of the year were an advancing market that affected Pennsylvania grade on September 28 and Oklahoma-Kansas grade on November 29. The closing prices per barrel for these typical grades were: Pennsylvania $2.25; Oklahoma-Kansas, $1.40.

As a consequence of an increasing demand for oil and a decrease in the stocks held by pipe-line companies and purchasing agents, the market for grades of petroleum produced in California was uniformly strong throughout the year. The quotations posted on December 28, 1915, remained in effect until February 15, when all grades

except Ventura County were advanced 10 cents. A further advance of 5 cents posted April 1, likewise affected all grades except Ventura County. Subsequent advances of 5 cents each, involving all grades of oil produced in the State, became effective on September 30 and November 21.

Under the stimulus of relative high prices for crude petroleum during the spring and early part of the summer of 1916, drilling was active throughout the country, not only in proved areas but in places far from developed areas of oil and gas. The greatest wildcat activity was in Kansas, Oklahoma, Texas and Wyoming.

Aside from the routine work of keeping old wells producing to their full capacity, operations in the Appalachian fields consisted in the drilling of many new wells on "Inside locations" in the defined areas and in the reopening of a great number of "stripped" wells, whose operation is unprofitable when the price of oil is below $2 a barrel.

In Pennsylvania the extension of the Dorseyville pool, in Allegheny County, was drilled by a number of wells, which produced from the third sand and whose ties were above the average obtained in this part of the state. At the end of the year interest in this state was centered in Springhill Township, Green County, where a wildcat test on the George Isminger farm, completed early in December as a 200-barrel oil well, was interpreted as indicating the discovery of a new pool of oil in the Gordon sand.

In West Virginia the most important results of field activity in 1916 include the discovery and partial development of a rich pool of oil in the Thirty-foot sand on Dents Run, near Mannington, Marion County, and the proof of a northeastward extension of the Berea sand pool in the Cabin Creek district, Kanawha County, beyond the boundaries of the territory controlled by the company that discovered the pool late in 1914.

The petroleum output in Kentucky was increased nearly 200 per cent as a result of the remarkable success that attended the search for extensions of the Irvine pool in Estill County, and of the Scottsville-Petroleum district in Allen County.

The quest for oil in Tennessee was continued in a desultry fashion in 1916, but without notable success. Late in September it was reported that oil in commercial quantities had been discovered in a well drilled near Glenmary, in the southern part of Scott County, about 15 miles southwest of Oneida, the seat of the oil flurry in 1915.

The mainstay of oil production in eastern Ohio in 1916 was the Union Farmers Furnace district in Hocking County, which supplied a large number of creditable wells during the year. Gas field of considerable yield was developed in Jackson and Richland townships, Vinton County. In Knox and Holmes Counties drilling in the vicinity of the wildcat producer completed near Brinkhaven in 1915 was attended with indifferent success. Southwest of Cleveland, Cuyahoga County, a number of oil wells of small capacity were completed. An oil well having an initial capacity of 25 barrels resulted from a test a mile to the east of previous producing wells in the Wooster field of Wayne county.

Despite the fact that the greatest activity in drilling in the Lima district of northwestern Ohio was in Wood county, the best results were obtained in the Tiffin field, Seneca County. The redrilling of old territory in Van Wert County furnished convincing evidence that the oil resources of that part of the field have by no means been exhausted.

In Indiana the bulk of the field activity in 1916 was in the southwestern part of the state. The completion in August by the Indian Refining Co. of a 50 barrel well near Hazel ton, in Washington Township, Gibson County, north of the Princeton pool, furnished an incentive for further activity in the hope that a new pool might be developed.

No development of consequence resulted from drilling activity in Illinois in 1916, and an appreciable decline in oil production was recorded. The productive territory in the Colmar district, McDonough County, in the western part of the state, was practically all drilled and wildcat activity in adjacent counties failed to discover new areas of equivalent value.

So successful in developing new production was the drilling campaign in the Mid-Continent region, inspired by the waning of Cushing and the prompt advance of the crude oil market, that Oklahoma was enabled to retain in 1916 the premier rank as an oil producing state, and Kansas to secure recognition as an important source of crude oil.

The discovery of a prolific "pay" below the Bartlesville sand in the Cushing district, Creek County, Oklahoma, and the completion of a great number of gusher wells in the Shamrock or south extension of that district together with the successful development of the Augusta and El Dorado fields, in Butler County, Kansas, caused the overproduction that depressed the market for all high grade crude oils east of the Rocky Mountains during the summer and early part of the fall.

In Kansas the Augusta and El Dorado districts were the centers of drilling activity. At the end of 1916 there were about 500 producing wells in the El Dorado district, the combined daily capacity of which was estimated to be in excess of 5000 barrels. In the Augusta field more than 100 producing wells were drilled during 1916, and at the end of the year the estimated daily capacity of the field was in excess of 30,000 barrels. Significant discoveries of oil, the value of which had not been determined by the end of 1916, were made in Kansas, near Beaumont, Greenwood County, and northwest of Winfield, in Cowley County. In the old shallow-sand fields of Kansas drilling activity was attended with especially favorable results in the Paola district, Miami County, and the Wellsville district, Franklin County.

Outside of the Cushing district which remains the center of interest in Oklahoma, drilling activity was much greater than in 1915. This was particularly true in the Healdton field, Carter County, where a large increase in the production was recorded and where several million barrels of oil placed in field storage. Difficult drilling and the exceptional depth of the productive sands retarded development in the Blackwell field, Kay County, but the few wells completed in 1916 fully justified the confidence of the operators in the future of this district. In the southern part of the Osage Reservation an especially rich pool of highgrade oil was discovered and partly developed by the Tidal Oil Co., on its leases near Mominy. Operation in the Stone Bluff pool, discovered in 1915, resulted in the development of a small but productive area yielding high-grade oil in southern Wagoner County. Six miles south of Billings, in Noble County, the discovery in August of natural gas and encouraging showing of oil resulted in the starting of other tests in the hope of developing an important field. To the west of this locality, in Garfield County, a wildcat test completed in November as a 50 barrel oil well was interpreted as the forerunner of a promising development near Garber.

In the financial circles the leading feature of the year's developments in the Mid-Continent region was the merging of many independent interests, producing, transporting, and refining, into strong corporations, among which the Sinclair Oil & Refining Corporation, Cosden & Co., and the Cosden Oil & Gas Co. are perhaps the most conspicuous examples. Scarcely less important was the absorption by the Cities Service Corporation of many independent oil and gas producing oil refineries, and gas distributing interests in this region.

An increase in drilling activity throughout central and northern Texas, and the discovery of a productive deep near Electra, and the extension of the productive area at Burkburnett resulted in an appreciable increase in the petroleum output credited to this area. Wildcat activity resulted in promising discoveries of gas on the Hess and Edmonson ranches, in northern Palo Pinto County, of oil and gas near Saddo and Breckenridge, Stephens County, and of oil near Holliday, Archer County.

In eastern Texas a wildcat test near Bethany, Panola County, was completed in July as a productive oil well of sufficient capacity to justify additional drilling in that locality.

The important development in northern Louisiana in 1916 included, in Caddo Parish, the extension of productive territory in the Meooringsport district, south of Caddo Lake, to the south and west and the completion of a number of prolific gas wells in the new district south of Shreveport, in the vicinity of Logansport, near the Texas boundary; in Red River Parish, the discovery of new oil territory in the Grand Bayou district, southwest of the Crichton field; in Bossier Parish, the discovery of an important source of gas near Elm Grove west of Lake Bistineau; and in Morehouse Parish, the discovery of a gas field of promise a few miles southwest of Bastrop.

Humble easily retained first rank in activity and production among the saltdome pools of the Gulf Coastal Plain, despite a decided waning of the supply of oil obtained from its deep sands. Sour Lake was a steady contributor to the oil output of this region throughout the year. The completion late in October of a 6000 barrel oil well, at a depth of about 2000 feet, in the Goose Creek pool added largely to the output of this erratic pool and made it the center of drilling activity at the end of 1916.

High average prices for Gulf coast grades of oil in 1916 resulted in greater activity in all the pools than in 1915, and to this activity most of the old pools responded with increased production.

The petroleum output of Wyoming was materially increased in 1916 as a result of the installation of a refinery at Greybull, Big Horn County, by the Greybull Refining Co., and of the completion of a pipe line by the Illinois Pipe Line Co. from Elk Basin, in northern Park County, to the Burlington Railroad at Fannie.

The most notable development of the year in Wyoming was the opening of a new field on the Big Muddy anticline, in western Converse County. The protential importance of this field lies in the favorable geologic structure involved and in the demonstrated presence of high-grade oil in two principle zones of production that correspond in position to the Shannon field and the prolific Wall Creek sands in the Salt Creek field, to the northwest in Natrona County.

Of less potential importance was the discovery of oil in small quantities on the Lost Soldier flats in the northeast corner of Sweetwater County.

A number of productive wells were completed in th Pilot Butte field, Fremont County, opened in 1915 by the Hall Oil Co. In Oregon and Little Buffalo basin, in eastern Park County additional drilling in 1916 resulted only in gas production.

Although a number of wells were drilled in southern Montana in 1916, oil production in this state at the end of the year was restricted to the north end ofthe Elk Basin field, in southern Carbon County.

A moderate increase in production was the response of California's oil fields to the steady advance in prices that was the principal feature of the crude-oil market of this state. Drilling activity in all fields was nearly twice as great as in 1915, but the size of the new wells completed contrasted strongly with those of three and four years ago. The scarcity of oil of fuel grades resulted in especial activity in the Kern River and McKittrick fields.

PETROLEUM EXPORTS

Advance figures of the Department of Commerce on petroleum exports for December and the twelve months ending December, 1916, show a substantial growth, both in quantity and value over prior years. The figures are as follows:

Year	Quantity, Gallons	Value
1916	2,583,037,000	$199,630,000
1915	2,329,575,617	142,972,322
1914	2,240,033,652	139,900,587

THE AUTOMOBILE INDUSTRY

As there is close connection between the oil business and the increase of automobiles, the figures showing the present condition of the automobile industry have a peculiar interest to the oil trade. Each automobile built and put to use means an increased demand for gasoline and lubricating oil. The number of cars being run is now so great that the stocks of gasoline are kept at a low point except when severe weather reduces their use, and it is expected that next year will witness a large addition both to tractors and pleasure cars.

Figures given out by a Chicago firm selling automobiles, show that there are 3,108,468 registered automobiles in 47 of the leading countries of the world. In the United States alone the number on September was given as 2,500,000. The value estimated, at $1,000 per car, was $2,500,000,000. This number does not include farm tractors and others, so that the total cars using petroleum products is much larger than the figures show. The number of men employed in the automobile factories, is given as 700,000. This industry has grown practically within little more than a decade, and promises to make a greater expansion during the next few years. At the above estimation of the number in use there is one car for every 40 people in the United States.

In 1915 the Government reported the gasoline production as 2,080,000,000 gallons, or 41,600,000 barrels of 50 gallons each. The output for 1916 is estimated at 2,500,000,000 gallons. Of this amount 350,000,000 gallons will be exported. This will leave for the use of the cars already registered in the United States a yearly supply of 860 gallons each. Of course the number given includes those run by electricity, but also it cannot be estimated that all gasoline is consumed by cars. Some of it goes into other uses, so the proportion is fair. With the further addition of several hundred thousand cars which the manufacturers expect to sell the coming year, the supply of gasoline becomes an interesting matter.

Developing a New Field

One of the most recent important moves in the petroleum situation is the taking over an option of the Cedar Spring Well and 2,000 acres of surrounding well, by a syndicate, with the intention of deepening the well, and thoroughly testing the locality.

This well is located on the San Juan ranch, in San Luis Obispo county, the property of Henry Wreden, of San Francisco. It was drilled to a depth of 1,965 feet, and owing to a disagreement between Wreden and a partner in the enterprise, the well was closed down and plugged, some four years ago. Since then it has been lying a mystery to those interested in oil and it was considered as the key to the petroleum prospects of that part of the state, but deepest secrecy surrounded the well and what was found in it.

About January 1, 1917, Dr. Clarence E. Edwords, of San Francisco entered into an agreement with the Cedar Spring Oil Company, a partnership composed of William H. Hamilton, representing the McDonald interest, and Anna Wreden, representing Henry Wreden, whereby he, for himself and associates, took over the well and 160 acres of land, and also took an option on three other sections of adjoining land, with the agreement to drill the well at least 500 feet further.

The total amount involved in the transaction is $1,600,000, this including the well, machinery and material on the ground.

Drillers are now on the ground cleaning up the machinery, relaying water lines and preparing to drill out the cement plug, after which two shifts will carry forward the work. It is expected that the well will reach a depth of 2,500 feet by April 1.

An examination of the log of the well, which has heretofore been kept shows that the drillers passed through two oil strata, one at 800 feet, of about twenty feet thickness, and the other at 1,400 feet, with a thickness of 295 feet. The latter, undoubtedly, carries a high grade oil in sufficient quantity to make a 200 barrel well, and if the redrilling does not show a good flow it is the intention to go back and test the strata passed through on the first drilling.

Those interested in oil development have long looked upon this part of the state as having great oil possibilities, and many efforts have been made to secure leases from Wreden, but he invariably declined to consider any offer.

In this connection it is interesting to note that in the October, 1912, issue of the California Derrick, Paul W. Prutzman, recognized as one of the most careful and conscientious engineers, wrote an article on this well in which he predicted the exact condition that is now found. The article is worthy of reproduction and is here given in full:

"The well of the Cedar Spring Oil Company, located on section 29, 28-17, M. D. B. M., in the southeastern part of San Louis Obispo county, about forty miles southeast of Paso Robles, has entered oil sand, and present conditions indicate that the well may become a producer of oil in commercial quantities. As the well is the first to tap the oil stratum in the new territory, the sand will probably be tested in order to permit the well's projectors to determine whether they will bring it in on the present showing or proceed with the drilling in search of more prolific sands.

"The oil is coming into the hole against a water pressure of about 700 pounds to the square inch, and it is said to be of very high gravity and to have a paraffine base, most all water in the well has been shut off between 800 and 900 feet with the 12 1-2 inch casing and the hole is down 1600 feet with 10 inch casing. For the last 200 feet the bit passed through sands and shales showing tar and oil, and should a test of the well satisfy the owners that they have oil in their first well in commercial quantities they may decide to cement the 10 inch casing and bring the well in and proceed immediately with the drilling of other wells.

"This pioneer well of a new district is located on the San Juan ranch, which property, together with much territory contiguous to it, has long been supposed to be petroliferous. The geology and paleontology of the country round about is extremely interesting. To the careless observer the remarkable cropping exposed by erosion has had no particular significance, but oil men were long ago attracted by them and they have been awaiting with interest to learn the result of the Cedar Spring Oil Company's efforts at opening up the country.

"The new territory which will be added to California's proved oil lands if oil is discovered in commercial quantites in this well is generally called the San Juan Oil District, it having taken its name from the San Juan ranch, through which courses the San Juan River. Probably some of the most spectacular stratigrafic exposures of geology to be found in the state are to be seen on this ranch, and it is a natural consequence that the field has taken its name from the place where its petroliferous qualities are most evident.

"The major anticline of the district, called the San Juan anticline, was first picked up on the San Juan ranch, and its strike can be followed for many miles. As is usually the case in California oil fields, this major anticline has a trend northwesterly and southwesterly, with elevations on its apex from 1000 to 1500 feet above sea level. In general it is broadly arched, with a slope of about 25 to 35 degrees on its northeasterly flank and a maximum of 55 degrees on its southeasterly sinclinical fold. The discovery well is located about 900 feet to the northeast of the anticline's axis in a flat which has resulted from aggradation of the wash from nearby hills.

"While the structural features of the district are very similar to those of Coalingo, no live seepages of petroleum are to be found in the vicinity of the San Juan ranch, and it is difficult to prognosticate the finding of oil in the underlying strata. However, numerous and copious seepages of petroleum do not denote the certainty of the discovery of oil in large quantities in the under lying strata in their vicinity, nor does the lack of seepages determine that a country having other favorable surface indications of its being oil bearing prove the improbabilities of the accumulation and preservation of oil in commercial quantities beneath the surface.

"The San Juan country was examined carefully by a geologist having a reputation for being a careful observer and a conservative commentator on the qualities of mineral lands, and the honor is due him for having located the Cedar Spring Company's well by pure geological observation. The projectors of the successful well deserve great credit for their faith and enterprise in opening up a new field in California, which, though last, may be, in the not distant future, by no means the least in point of wealth of production if present indications form a basis upon which to judge."

It is to be noted that the driller of the well did not take a test of the sand found at 1400 feet but cased it in and went down, thus losing to this well the possibility of a commercial well at that depth. No adequate reason has been given for this procedure, and it can be explained only by supposing that either the driller wanted to lengthen his job, or the owners desired to go deep in hope of striking a better oil. The fact remains that to this day no one knows exactly the quantity or the quality of the oil passed through, except that it is known that the oil which clung to the bit after being drawn through fifteen hundred feet of water, showed high gravity, and evidenced large quantity.

That the big companies are interested in this part of the state is evidenced by the number of scouts who have been trying to secure leases and option of land all along the San Juan valley in the vicinity of this well. A flattering offer was made to Mr. Wreden for five sections of land within the past month, which he refused.

The district has always been looked upon with favor. and a short distance from the Cedar Spring Well, the Cooperative Oil Land Company is preparing to sink a well on its property, on the old Hughes ranch. This property has all of the surface and geological conditions of the San Juan ranch, and will, in all probability, make the same showing. The Cooperative company has its standard outfit in place and has also a Keystone outfit, and now waits for the securing of the necessary casing to start constant drilling. The company expects to strike commercial oil at less than 1500 feet and will bring in the well as soon as it is assured of even a minimum commercial well, and will then proceed with other wells.

The Oil Industry During 1916

With the old year just closed the oil producer has had the first taste of real prosperity experienced in many years. In 1916 the California fields yielded a total of 91,882,362 barrels. While this production was approximately two and a quarter million barrels in excess of 1915, it was wholly inadequate to meet the demand, which reached a total of 105,000,000 barrels, an increase of fourteen million barrels over 1915.

Since early in the year, withdrawals from stock to meet the market demand have been heavy, and this condition reached a maximum in December, when almost two million barrels were taken from stock.

The failure of production to meet the market requirements created a strong upward tendency in crude oil prices, which advanced practically 70 per cent during the year. The base price of forty-three cents for heavy oil on January 1, 1916, increased to seventy-three cents and the price for light crudes showed a corresponding increase.

Development failed to respond to the better price conditions, and records for the year show but 567 well completions. In 1910, the banner year of development, there were 1019 wells completed.

The development, which may be classed as meager, has suffered chiefly through the uncertainty as to title of unpatented lands within the withdrawn areas. Producers cannot undertake the expenditures necessary for new wells until their titles are assured. Unpatented lands in suit, which have passed to the control of a receiver, show little or no activity. A condition, therefore, bordering upon stagnation exists upon the unpatented lands. In a much lesser degree the difficulty in obtaining material has had some effect in retarding development.

In spite of the limited development, production nevertheless increased, adding further testimony to the remarkable persistency and permanency of yield of the oil measures of California.

There was but little addition in 1916 to the known producing areas. Wildcatting was limited, and the search for new territory was confined largely to areas already partially explored, which had yielded some small production. In the San Joaquin Valley fields the McKittrick front attracted considerable attention. Little new production has yet been developed in this field. Several localities in Santa Barbara County, known to contain oil, were active centers of development.

Sufficient progress has not been made at the end of the year to determine the real value of this territory. In Ventura County a well on the Ventura River, near the city of Ventura, indicates a small pool in a new area.

What the year 1917 will bring to the industry must be pure conjecture. At no time, however, since the industry has been of real prominence, excepting the large group of producers on unpatented lands who are unhappily involved in controversy and litigation with the Federal Government, has the producer faced a new year with more favorable prospects.

While consumption now is greatly in excess of production, a settlement of the unpatented land controversy, which will permit development of these lands, will go far towards solving the problem of production shortage. New fields are possible from untried areas long regarded favorably, now in course of development. On the other hand, continued production shortage, with a consequent increase in value, may greatly lessen the consumption through contraction of the present market area for California oil. —Standard Oil Bulletin.

MEXICAN PETROLEUM

Mexican Petroleum Co. is increasing the capacity of its plant at Tampico, Mex., to 50,000 barrels a day, making it rank with the largest refineries in the United States in point of size. Its new refinery at Destrahan, near New Orleans, La., has a capacity of about 6000 to 7000 barrels.

This Tampico plant is being used to top the gasoline off the crude oil. It puts the company in a position to place gasoline in the American markets on better terms than most of the American companies.

The other big development which has taken place in the affairs of the company is the expansion of the fuel oil market in this country. Mexican Petroleum previously has been the big fuel company so far as steamship lines are concerned, holding large contracts with American and British lines, and it now is developing the fuel oil market in this country. Arrangements are being made with manufacturers throughout the eastern section to substitute oil for coal because of high price and for natural gas because of failing supply.

California Derrick

The Oil Authority of the Pacific Coast

PUBLISHED MONTHLY
—BY—
The California Derrick Publishing Company
DR. CLARENCE E. EDWORDS .....Editor
E. L. MACKEY ..... Business Manager

OFFICES
509 Sansome Street, San Francisco, California
Telephone Sutter 2984
Editorial Rooms 417 Montgomery St., Room 422
Telephone Douglas 3617

Subscription price, per year, $2.00 **Foreign $2.25**
Advertising Rates on Application
Entered as second-class matter February 17, 1912, at the postoffice at San Francisco, Cal., under the Act of March 3, 1879.

THE DERRICK'S CREED

The California Derrick has no axe to grind, no company to promote, no stocks to sell, no "interests" to bow to. Not dominated by any company, but faithful to California's Oil Industry.

OIL COMPANY CUTS MELON

The Ohio Oil Company recently called a meeting of stockholders at Findlay, with the announcement that the par value of stock will be increased from $25 to $100 a share. The company is capitalized at $15,000,000, and the change will make it $60,000,000. The company was organized three years ago, and a short time later was purchased by the Standard Oil Company. The company surplus at the present time is announced as $75,000,000.

OIL COMPANY AWARDS CONTRACT

What is probably the largest contract ever received by a Bakersfield teaming contractor has been secured by H. J. Brandt in Oklahoma, where he will do the hauling and trenching for two pipe lines extending from the Healton and Cushing oil fields to St. Louis. The two lines total 584 miles and the contract calls for about $500,000. Brandt furnished $100,000 bond for the same. He will leave about January 20 to assume full charge of the work.

GENERAL PETROLEUM PLAN DEVELOPMENT

A deal has just been closed whereby the General Petroleum Company is to make a thorough test for oil on the lands of the Carson estate, located on Dominguez hill, midway between Long Beach and Los Angeles, and adjoining the Standard and Highland Development companies' properties.

The work already started on the Carson lease by the original syndicate holding the land has recently been taken over by the General Petroleum Company and a 106 foot derrick is completed. Drilling will begin as soon as machinery can be put in place.

GEOLOGICAL MAP OF CALIFORNIA

A new Geological Map of the State of California has just been published by the State Mining Bureau under the direction of Fletcher Hamilton, State Mineralogist.

The geological formations found in this state are shown in twenty-three colors and symbols. The new may is 50 by 60 inches, on a scale of 12 miles to one inch, and represents over two years of painstaking compilation from all available published reports and maps, both governmental and private, as well as much previously unpublished data both official and personal.

An entirely new base map of the state was drawn for the purpose, and is strictly up to date as regards county boundaries, postoffices, railroads, highways, roads, power transmission lines, oil pipe lines, aqueducts, etc. In fact, it contains much more detail of this nature than is ordinarily placed on a geological map.

The map is truly a fine example of draughtsmanship and of the engraver's art. The geology is given in detail, consistent with the scale of the map, and is the resultant work of many years on the part of James Perrin Smith, the well known geologist.

The map is available at $2.50 per copy mounted on cloth with moulding at top for wall hanging, and $1.00 per copy unmounted. These prices represent the cost of printing and distribution.

Address: State Mining Bureau, Ferry Building, San Francisco.

UNION OIL SCORES SUCCESS

"A song of prosperity" might well be the title of the annual report of the Union Oil Co., just issued for the year ending December 31, 1916. And the chorus of the song would include not only the company itself, but the entire oil industry of California.

During 1916 the oil industry of the state recovered from the long depression that prevailed up to the fall of 1915, when in increasing demand and a diminished available supply forced prices upwards. During the year just ended the business of the Union Oil Company forged steadily ahead, and the report for 1916 shows that the company's values have been conserved and enhanced. The figures quoted show the biggest sales and profits in the history of the company, and the strongest current financial condition, the company has ever known. The report states that the position of the Union Oil Co. in the industry of the state is decidedly satisfactory.

The net profit for the year was $7,224,563.68, an increase of $4,405,434.50 over that for 1915. In spite of this increase in business, amounting to 156 per cent over the total profits for the previous year, the general expenses of the company were $30,778.21 less than in the year before.

Although the company controlled 19,600,000 barrels, or 22 per cent of the total output of the state for the year, which amounted to 90,000,000 barrels, it plans during 1917 to maintain a greater number of drilling crews, the total output for 1916 having fallen something short of the demand.

At the close of 1916, the properties of the company were valued at $46,015,734.21, an increase of $2,902,605.92 over the preceding year. During the year 1600 acres of property were added to the lands of the company. The corporation now owns and controls 220,000 acres of land. The production of these since 1890, when the company was organized, or since their acquisition by the company, has been 75,000,000 barrels of oil. Yet, even at this enormous figure only a small percentage of these holdings have been developed. The development of potential wealth will add greatly to the

book values of the company. Thirty active drilling wells and 316 producing wells are now being operated.

Several additions to the company's equipment were made during 1916. Two steamships, "La Brea" and "Los Angeles", were added making a total fleet of nineteen steamers and barges and five chartered steamers. A new refinery was erected on a 260 acre site at Los Angeles harbor, where the production from the Fullerton fields will be refined. This plant has an initial capacity of 10,000 barrels of crude oil a day. A new marketing station was also opened at Valparaiso.

The current assets of the company are $4,442,983.87 more than on December 31, 1915, while current liabilities are $137,334.25 less. The working capital increased $4,580,318.12 or 53 per cent, during 1916. The new year opened with an unappropriated surplus of $1,561,591.83 on hand. Dividends paid and additions to the surplus were at the rate of 15 1-4 per cent per annum.

Total dividends paid during the seventeen years since the founding of the company amount to $30,000,000, to which was added a surplus of $15,400,000. For the same period additions to properties, investments in subsidiary companies and current assets approximate $51,000,000.

Two important employees' benefit plans were instituted during 1916.

At present the Union Oil Co. operates fourteen main stations, 97 sub stations and commission agencies, and eleven foreign stations.

OIL AND GASOLINE IN JAPAN

Drilling for oil and the production of gasoline in Japan has shown a large increase within the past five years, and indications point to still greater strides in the years to come. Oil found in the less than a dozen fields in Japan has a gravity of nearly 25 degrees Baume with traces of paraffine. The petroleum industry is chiefly controlled by a few companies, the Nippon and the Houdon being the largest, in the neighborhood of nine-tenths of the output being handled by them. The Chuo and Nakano companies are also quite prominent in the trade. The oil fields of Japan are described as "widely distributed in a belt lying along the west side of north Japan and extending from the west coast of the island of Sakkalin on the north along the coast of the Sea of Japan through the west side of the central mountain range of Hokhaido, thence stretching across the provinces of Matsu, Ugo, Echigo and Shinano to the Pacific Coast of Totumi on the southern oil belt has been defined near the west coast, in Formosa."

EIGHT-HOUR DAY FOR OIL MEN IS ASKED

An eight-hour day for men engaged in the oil industry in California is asked in a bill introduced by Assemblyman W. W. Harris of Bakersfield upon the request of men in the Midway Sunset Oil Fields.

The passage of the bill is urged upon the ground that it is a hazardous occupation and to work men longer than eight hours a day is making it particularly dangerous. With the exception of the Standard and Shell Oil Companies, which have granted the eight-hour day, most all concerns are working their men ten and eleven hours.

The bill if passed, will effect about 10,000 workers.

The Standard Oil for Motor Cars

California crude oil has an asphalt base. Engineers of the highest standing, in the government service, and associated with the leaders in America's great motorcar industry, are agreed that asphalt-base crude is best suited for the manufacture of motor oil. Zerolene, the Standard Oil for motor cars, is correctly refined from California's asphalt-base crude. It gives most lubrication with least carbon, and this fact is being constantly demonstrated to the satisfaction of hundreds of thousands of Zerolene users who testify to its perfect lubricating qualities.

Dealers everywhere and at our Service Stations

Standard Oil Company
(California)

News From California Oil Fields

Activity at Fullerton

The Birch Oil Company is drilling four wells.

The Fullerton Oil Company has two new wells under way.

The well on the Birkenstock lease is being redrilled and is now down 1065 feet.

The Santa Fe is drilling 5 wells and has completed a rig for another hole.

There was considerable excitement in Brea Canyon when No. 29, on the Brea Canyon lease began spouting oil over the crown block. The hole is down only 200 feet.

The Columbia Oil Company is getting along better with Orange No. 7, which is down 1,500 feet. At Olinda this company has wells 26, 27 and 29 drilling.

The Union Oil Company is now employing 300 men in the local field, more than it has ever had on the payroll here before. It is pushing development work on all of its leases.

The Homestead Oil Company has started a well on section 12, 20-14, near Coalinga with a standard rig and 80 foot derrick.

News from Bakersfield

The Santa Fe Railroad, through its Kern river corporation the P. D. Company, has leased 1750 acres from the Kern County Land Company on the Kern bluffs on the south side of Kern river opposite the Kern river field. The lease is for thirty-two years and the Santa Fe is to pay one-sixth royalty on all petroleum produced.

A well is to be put down in the near future. Some years ago the Santa Fe drilled a well not far from the present lease, and it was said did not obtain oil in paying quantities. That lease was from F. W. Burroughs, who later sued the Santa Fe and secured a heavy damage judgment in the local courts. The case is now in the courts on appeal.

The Midnight Oil Company years ago drilled a well on the bluffs without securing oil. It is the contention of some oil men that the oil measures are to be found on the south side of the river, but they lie very deep. In the Kern river field the depths of wells is 1000 to 1300 feet.

The proposed Pacific Pipe Line Co.'s pipeline from the Midway-Sunset district to Ventura harbor, has been surveyed for some years. The project was first broached soon after the bringing in of the big gushers in the Midway field. A number of pipe-line projects went through at that time, but the Pacific Company was not financed.

The proposed line will be one of several pipe and gas lines crossing the lower end of the Coast range to Southern California. It is also indicative of the increased demand for oil for shipping purposes.

Taft Activities are Numerous

The Union Oil Co. is rigging up on section 14, 23-32, preparatory to drilling deeper after setting the 8 inch casing and cementing off at a depth of 2500 feet.

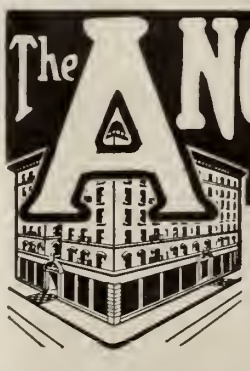
The No. 19 well of the St. Helens Petroleum Co., on section 16, 32-24, is down over 3250 feet, with indications that the oil sand will be encountered at a depth of about 3500 feet. This well is along the Standard Oil Co. Derby lease line.

The deal for the lease of the Mammoth Oil Co., which has been pending for some time, has been closed. A price of $450,000 was paid by the Standard for 80 acres of land leased by the Mammoth company near Fellows. The land is located in one of the best oil-producing sections on the West side.

Five or six years ago the Mammoth brought in a tremendous well which yielded 30,000 barrels the first day.

Directors of the Mammoth were in session recently to decide whether to continue in the oil business or to retire. The company has filed a petition with the Superior court, asking for permission to disincorporate, but it is possible that it will continue in business, in which case the petition will be withdrawn.

President H. D. Coulson of the Victor Oil Company is in the fields making preparations to take advantage of the present high price paid for oil. His company has four producing wells on section 35, 32-23. All are handled on a most economical basis and have for a long time produced excellent dividends for the owners. From the incomes of these wells more holes are now to be put down in the near future, the drilling of the first new well to start within another month. The purchase of the North American-Mt. Diablo property immediately



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adjoining the Victor has caused those holding stock in the Victor company to have much faith in the future of the property. This faith is also much apparent with those who have invested in the Hamilton Oil and Gas property immediately adjoining. The Hamilton property has never been drilled on, though it has excellent prospects.

Field Activity at Santa Maria.

Activity in the Santa Maria district, which commenced to assume boom proportions late in the old year, is steadily increasing, and recent results have been uniformly good. The Doheny interests have been greatly encouraged by a find of a 15 gravity at a depth of 1100 feet in a well put down, at a point 1700 feet north of the Pinal Dome's Escolle line. This well is reported to be producing 800 barrels per day.

The field department of the Associated Oil Company is preparing to lay a pipe line from the pumping station at Divide to the wells of the Doheny Pacific Petroleum Company and the Casmalia Syndicate. The production of these wells has been contracted for by the Associated Company, which has also added to its holdings, in the district by the acquisition of the Ord-Peshine tract.

Doheny Secures Tract in Midway.

A transfer deed conveying the northeast quarter of Sections 3, 21-22, in the North Midway field to E. L. Doheny was filed recently at Bakersfield. The land was purchased by Doheny from the Barber Asphalt Co. There has been no development work of any consequence on the property, which is about a mile and a half east of the big gas well brought in by the Doheny interests on section 1, 31-22. The land on which the gasser was brought in was also purchased recently by the Doheny interests. The land surrounding the section is owned or controlled largely by the Associated Oil Co.

New Strike in San Luis

Eighteen years ago John Conway and others ventured in well drilling at Casmalia in San Luis Obispo county, with no success, but now comes Edward L. Doheny, the California oil king, and sinks a well close to where the old well was drilled. Oil of 16 gravity was struck and the well is producing 500 barrels a day at a depth of 1,000 feet. It is expected, from the flow of gas, that the well will become a gusher.

San Luis Obispo county is the coming field for extensive operations in California and all the big companies are sending their scouts into the county for the purpose of securing leases and options.

Development in the McKittrick Field.

The Manrino Oil Company, a new organization in the Belridge field, will begin important work by drilling three wells in section 3, 29-31.

A new well is to be drilled by the Pittsburg-Belridge Company on section 30, 28-21.

Two new wells are to be drilled by the East Puente Oil Company, and one each by the San Francisco and McKittrick and the Jackson Oil Companies.

The Lost Hills field has reported several good producing wells recently, and exploration indicate that the field will extend further west into the Carriso Plain district.

Extensive development work is planned by the Jewett Oil Company in this district. Construction work is now under way and new wells will be drilled as rapidly as circumstances will permit.

The Berry and Keller Oil Company has brought in a new well, No. 17, on its lease on the North end of the McKittrick field, with a production of 70 barrels a day. The company has spudded in No. 18 and is making progress with the drilling.

Two new wells on the Fearless lease are being rigged up and will shortly be spudded in by the Standard Oil Company.

At the annual meeting of the McKittrick Oil Company the following officers and directors were elected to serve during the year: President, H. A. Jastro; vice-president, S. P. Wible; secretary, C. Brower; treasurer and depository, First National Bank of Bakersfield. The stockholders of the McKittrick Extension Oil Company, at the annual session held the same day, elected S. P. Wible president; J. M. Jameson, vice-president; C. Brower, Secretary, and the First National Bank of Bakersfield depository. Under the impetus of the advance in the price of oil the McKittrick Oil Company will probably take measures to make certain improvements and put its several wells in condition for the fullest production.

The Santa Fe, which during the closing week of 1916 announced its readiness to sink eleven wells on the lease known as the Chanslor-Canfield Oil Company (one of its subsidiaries) in the Midway field, has just made known its intentions to drill twelve more wells in the same district. All of these wells will be located in four sections —one on section 34, 31-23; four on section 1, 32-22; six on section 31, 31-23, and twelve on section 38, 31-22. Thus, other new wells figuring in the total, the Santa Fe has within the past sixty days been credited with an addition of thirty-one new holes to the long list in

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the Midway, nearest competitor of the Santa Fe in respect to the number of wells being the Standard Oil Company, with fourteen in the McKittrick and Midway districts, and the Pan-American Petroleum and Transportation Company, with eleven. The Kern Trading and Oil Company is fourth with nine wells. The last named is preparing to sink two wells in section 19, 32-24, one in section 33, 31-23, and another in section 15, 32-24, all in the Midway.

CALIFORNIA CONCENTRATES

The Associated Oil Company is building a 112 foot derrick for combination rig on section 12, 20-14. Well No. 8 has been redrilled and other wells will be drilled in the near future.

The Western Oil and Gas Company has been incorporated at Phoenix, Arizona, with a capital of $250,000. Douglas L. Bopst, William W. Booth, both of San Francisco, and J. F. Cleveland and John S. Lane of Phoenix are the incorporators.

Big 7 Oil and Gas Company has been incorporated at Phoenix, Ariz., and Enid, Okla., capitalized at $250,000, with L. D. Pemberton, James A. Box, B. Hackett, C. A. Harley, J. A. Harley, H. D. Fleming and Anna V. Clampett, all of Enid, as incorporators.

Another oil lease has been signed by the Dominguez Estate Company, to George W. Walker, vice-president of the Citizens Trust and Savings Bank of Los Angeles, and W. S. Stirckler, an Iowa capitalist. The property comprises 460 acres. Drilling will be started at once.

The Coalinga Lubricating Oil Company of Los Angeles, has been incorporated with a capitalization of $100,000. The incorporators are R. A. Collins, J. A. Judkins, W. T. Clark, M. M. Binford and G. H. Rathman.

The officials of the Hale-McLeod Oil Company are preparing to put down a wildcat well in the McFarland district. They have leased 1,400 acres and are prepared to go ahead with active operations.

The Mammoth Oil Company, with offices in the Crocker Building, San Francisco, has petitioned the Superior Court for an order of dissolution. The company was capitalized for $100,000. The directors named in the petition are C. J. Berry, H. F. Berry, C. T. Holbrook, Jr., and William L. McGuire.

The General Petroleum Corporation has secured forty acres of citrus orchard land or John Barnard for oil development purposes. The property is in Ventura County and the first well will be started within the coming month.

The Republic Oil and Refining Company, of Phoenix, Arizona., has been incorporated for $500,000, with Edward C. Ryan, Henry Abelshouzen and W. G. Winstead as incorporators.

J. F. Yoakum has announced that drilling operations will be started at an early date on the plains near McFarland. He believes the new district will prove a rich oil field.

The Inland Oil Company, of Phoenix, Ariz., has incorporated, capitalized at $2,500,000. The incorporators are J. G. Bilt, Norman A. Morrison and F. H. Larsen.

San Diego capitalists have organized the New Era Oil Company, and have purchased 45 acres of land a mile east of Placentia. A well will be drilled at once.

The Concord Oil Company has been incorporated at Phoenix, Arizona, with a capitalization of $7,000,000. F. Elmer France and H. G. Barker are the prospective millionaires.

Plans are under way by E. L. Doheny to drill on the old Bracker ranch. Oil indications are said to be good in this part of Ventura county.

The sale of the Brear Creek and Mammoth Oil Companies, both situated on section 31, 31-23, in the Midway Oil Field, to the Standard Oil Company of California, for $450,000, has been made public. It is the biggest single oil transaction of the year. The Standard

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acquires properties aggregating 160 acres with a monthly production of 20,000 barrels.

The officials of the St. Helens Petroleum Company, Ltd., have taken a lease covering 93 acres lying between Long Beach and Los Angeles. It is known as the American Colony tract.

Early drilling for oil on the south side of the river at Bakersfield is indicated by the renewal of a lease of 1,750 acres by the Kern County Land Company, to the Petroleum Development Company, the latter being in effect the Santa Fe Railway.

Preparations are in progress for the drilling of the third well on the lease of the Baker and Henshaw oil companies, in section 12, 26-20, of the Lost Hills district.

The California Star Oil Company is to drill another well on its property in section 26, 31-22, in the North Midway district.

The Peru Trading and Oil Company is to drill two new wells in section 15, 32-24 and another in section 33, 31-23.

The Engineers Oil Company is to sink a well on section 14, 31-22.

The Tannehille Oil Company has purchased forty acres near Maricopa, from the Midway Oil Company. It is planned to put down several wells.

The Dudley-Dudley Oil Company is preparing to drill a number of new wells in the Lost Hills district.

D. B. Whiteside has bought 7,000 acres of foothill land on the northwest side of Brea canyon, and will begin development work for oil.

OILS NOW BIG SECURITIES

Assuming that peace is anywhere near, the oil stocks have first claim as the peace stocks. Not only have some of these companies received no benefit from the war, but they also have been retarded in their development through shipping conditions and closing of foreign markets.

Mexican Petroleum is the big example of this class of company. It received no direct revenue from the war, and has been back in carrying into effect contracts made prior to the outbreak of the war. Those contracts were made with the big British ship lines, and were for the conversion of the coal burning ships into oil burners.

Preparations had been made to convert the big English merchant steamers shortly before the war broke out; some of the boats had already been tied up, when they were forced into immediate service through Admiralty action. Since then no opportunity has been had to convert the steamers.

The conversion to oil burners will take place just as soon as the vessels can be spared from service which, presumably, is at the end of the war.

Since those contracts were made, the substitution of oil for coal as fuel has become all the more necessary through the big advance in the price of coal, prices having tripled in certain instances.

So far as the big companies are concerned, their business in kerosene was seriously interfered with. Notwithstanding the large demand for gasoline, kerosene still remains the backbone of the oil industry, and the branch which represents most profit to the refiners. Out of a barrel of high grade Pennsylvania oil, refiners are able to get 20 per cent to 30 per cent of gasoline; out of the same barrel of oil they can get 70 to 80 per cent of kerosene. The demand for gasoline has been out of all proportion with that for kerosene, and the refiners have been compelled to store vast quantities of kerosene, the market for which is thoroughly glutted. Kerosene today is selling for 1 1-2 to 2 cents a gallon in Oklahoma practically being given away.

China and the Far East is the big market for kerosene. But because of high shipping rates it has been impossible to get kerosene there at a price where it could be freely marketed. The European market similarly has been affected.

When normal conditions are restored and the kerosene market revives, the refining companies will make fully as much money as now, even allowing for a substantial decrease in Europe's purchases of gasoline, in the opinion of the best informed men. These same men, however, are not at all sure that European buying of gasoline is going to decrease heavily with the end of the war. At present in Europe there is little private consumption of gasoline, its use having been restricted largely for war purposes. At the end of hostilities unrestricted private use of gasoline is going to offset, in part at least, the smaller purchases of gasoline for war purposes.

PLAN FOR PIPE LINE REGULATION OUTLINED

Here is an outline of the regulations for common carrier pipe lines, which the Railroad Commission will be asked to adopt if the Supreme Court declares the law enacted four years ago is constitutional. Attorney Alfred L. Black, who is pushing the matter for those interested, has prepared these regulations, subject to change, if any suggestions are offered worthy of adoption.

First—For the gathering of crude oil from the settling tanks of producers and conveying the same to the main trunk pipe line, a charge not exceeding 2c a barrel, the pipe-line company to be required to make a connection with the wells of any producer within a distance of five miles, who may have an actual production of not less than 100 barrels per day.

Second—For transportation in the trunk line to market or tidewater the rate is not to exceed 4 cents per barrel per 100 miles, and not to exceed 12 cents per barrel for the entire distance from the Kern county fields to the terminal at Los Angeles or San Francisco Bay. The present railroad rates are about 40 cents.

Third—For storage at the terminal of oil received, the pipe line company will be required to hold the oil free for ten days, then to charge demurrage at the rate of half a cent per barrel per month.

Fourth—Provision is to be made for connections with the plants of consumers at the terminals. It is suggested that the pipe line companies be required to connect, on demand, with any refinery having an assured consumption of not less than 120,000 barrels a month.

Fifth—Regulations as to the minimum quantity of oil that pipe-line companies shall be required to accept for transportation. When the shipper shall insist upon the identical oil which he delivers to the company being delivered intact and unmixed at the terminal, a minimum not to exceed 10,000 barrels is suggested.

Sixth—When the identity of the oil is not required to be preserved, but where a like quantity of oil of the same grade will be accepted, a minimum of 1000 barrels is proposed, the pipe-line company to issue certificates for the oil accepted.

Seventh—When the amount of oil offered shall exceed the capacity of the pipe line, it will be required that the oil offered by each shipper be reduced pro rata, so that one or more big shippers cannot monopolize the pipe line.

Eighth—The pipe-line companies will not be required to accept oil of less than 13 gravity, or containing more than 3 per cent of water, sediment or other foreign substance. Shrinkage in transit must not exceed 1 per cent.

Ninth—Sixty degrees, F., is suggested as a proper temperature at which to measure the volume of oil offered, a deduction of credit to obtain at the rate of 1 per cent for each degree under or over the point.

Tenth—No charge for transportation of oil will be permitted if the proposed regulations are adopted until the oil shall have been delivered at its destination. The pipe-line company will have a lien upon the oil for the payment of charges.

IMMENSE COPPER PRODUCTION

The production of copper in the United States in 1916 surpassed all previous records, according to the United States Geological Survey, Department of the Interior. Preliminary figures and estimates have been collected by B. S. Butler, who has received reports from all plants known to produce blister copper from domestic ores and refined copper. At an average price of about 27 cents a pound the output for 1916 has a value of $520,000,000, compared with $242,900,000 for the output for 1915 and with $189,790,000 in 1913.

The figures showing smelter production from domestic ores represent the actual production of most of the companies for 11 months and an estimate of the output for December. The figures of a few companies for November were not available, and these companies furnished estimates for the last two months of the year.

According to the statistics and estimates received the output of blister and Lake copper from domestic ores was 1,928,000,000 pounds in 1916 against 1,388,000,000 pounds in 1915 and 1,224,000,000 pounds in 1913.

The output of refined copper (electrolytic, Lake, casting, and pig) from primary sources, domestic and foreign, for 1916, is estimated at 2,311,000,000 pounds, compared with 1,634,000,000 pounds in 1915 and with 1,615,000,000 pounds in 1913.

The production of copper from the mines of the United States for 1916 was more than double that of ten years ago and more than four times that of 20 years ago. The profit resulting from the domestic production was far greater in 1916 than in any previous year. It is probably safe to say that it exceeded $300,000,000.

INSPECTION AND REPORT WANTED

On January 1, 1917, Boiler Safety Orders and Air Pressure Tank Safety Orders became effective. These orders, issued by the Industrial Accident Commission, require that steam boilers operated in the State of California shall be subject to regular internal and external inspections each year. Air pressure tanks are required to have an inspection not less than once every two years. Committees of employers and employees assisted the Commission in preparing the orders.

Section (c) of Boiler Safety Order 800 reads as follows:

"Whoever owns or causes to be used a boiler subject to inspection shall report the location of such boilers to the Industrial Accident Commission of the State of California on January 1st, or within thirty (30) days thereafter, of each year."

The Boiler Safety Orders provide rules and regulations for the fittings and appliances that must be used on existing installations and also provide specifications to which new boilers must be built. These specifications are reproduced from the American Society of Mechanical Engineers' Uniform Boiler Code.

Air Pressure Tank Safety Order 900 reads as follows:

"Whoever owns, uses or causes to be used, any air pressure tank which carries twenty-five (25) pounds or over pressure per square inch, shall report the location of the same to the Industrial Accident Commission within ninety (90) days after these Orders become effective".

Safety Orders for air pressure tanks contain provisions for the fixing of allowable pressures that may be carried and for certain fittings and appliances which are necessary on existing installations.

With a few exceptions the specifications and regulations relating to the material and construction of new boilers in accordance with the Boiler Code are to govern the construction of all air pressure tanks over twenty-four (24) inches in diameter.

The Industrial Accident Commission has also issued Safety Orders effective January 1, 1917, covering Electrical Utilization, Trench Construction and Window Cleaning.

The Electrical Utilization Safety Orders cover safety standards for equipment, storage batteries, transformers, lightning arresters, conductors, switches, fuses, switchboards, motors and motor-driven machinery, arc welding, lighting fixtures and signs, portable devices, cables and connectors, etc.

The Trench Construction Safety Orders give standards for sheeting, shoring and bracing trenches and define where they will be required.

The Window Cleaning Safety Orders cover requirements relative to construction of fastenings for and use of safety belts, or other means providing for the safety of window cleaners.

Copies of any or all of these Safety Orders may be obtained upon application to the Safety Department of the Commission, at 525 Market Street, San Francisco, or Room 423 Union League Building, Los Angeles.

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Associated Makes Big Move

R. P. Schwerin, vice-president and general manager of the Associated Oil Company, has made public the fact that within the last two or three months his company has purchased more than 22,000 acres of oil lands and mineral rights in the Santa Maria Oil fields.

The amount involved in this enormous acquisition of proven and unproven oil properties runs into many millions of dollars, but Vice-President Schwerin refused positively to give any indication concerning the precise sum involved in this purchase.

It is known, however, that E. L. Doheny recently paid $1,600,000 for 10,000 acres of unproven oil land in the same district, and this purchase furnishes some indication of the price which must have been paid by the Associated Oil Company for its recent acquisition.

The announcement of this gigantic deal in oil lands serves to disclose the real reason for the economy in dividend disbursements which has characterized the policy of the Associated Oil Co. since Schwerin took charge of affairs.

As he discussed the company's future he said that his undeviating effort since he undertook the management of the company has been along the line of building up its resources so that its pipelines may be operated to full capacity, carrying the company's own oil.

R. P. Schwerin, Vice-President and General Manager Associated Oil Company

As a part of this broad-gauged plan of construction for the future Vice-President Schwerin said that he had recently increased the capacity of the Santa Maria pipe-line from 4000 barrels to 25,000 aa day. This pipe-line runs from the town of Casmalia, 65 miles to the Associated Oil Company's refinery at Gaviota.

Among the notable ranches of early California days which have recently passed into the hands of the Associated Oil Company, after experts declared that the indications favored the existence of oil upon them or after wells had been driven proving the ground are the following: The Zaca ranch, the Rancho Quartel del Quarti, the Wickenden ranch, the Pezzoni and the Ord-Pershine ranch, as well as a large number of smaller properties.

The oil contained on these properties is principally very heavy oil, similar to that which is being purchased from one of

Doheny's holdings in the same field by the Associated, but there are other oils which run from 10 degrees to 14 degrees Beaume.

Still, the bulk of the oil in this district is known as a high gravity oil. For purposes of consumption the heavier grades of the oil are mixed with distillate.

Vice President Schwerin said he believed that the Associated had a wonderful future before it and the general opinion in the financial district was that the company had strengthened its position amazingly by the purchase of these extensive holdings of land.

The Origin of Petroleum is---What?

Many an interesting debate has waxed warm over the question of the origin of petroleum, and the result of such debates usually is that each expert goes away feeling more thoroughly convinced he is right and all other theories are wrong.

J. A. Halderman, the steel barrel man, has some revolutionary theories regarding the origin of petroleum, says the Oil News. His theory is that petroleum is not the chemical product of inorganic matter, but that it is the remains of animal organisms that have lived in the sea and other bodies of waters. That isn't so revolutionary, but when he attempts to explain why petroleum is found in layers of sand at various depths in the earth; why we find the remains of arctic animals in tropical zones of climate; why the remains of tropical animals and plants are found in the frigid zones of climate; why earthquakes and volcanoes are caused by changes in level from heat that is being constantly produced; as well as many other phenomena in nature, by the slow but constant rotation of the earth, he startles one's imagination.

He claims that the North Pole is moving south at a rate of a little less than one-half mile per year across the face of one hemisphere, while the South pole is moving north at the same velocity over the face of the opposite hemisphere, and the equator is moving in unison with the poles.

He claims that in 13,000 years the poles will be at opposite points on the earth's surface that is now the equatorial line, in 26,000 years the poles will reverse each other, and in 52,000 years they will return to their present vicinity. That the polar circles in moving over new parts of the earth depress the land so that it becomes a sea bottom, and this is brought about from the centripetal force that causes the flattening at the poles. As the polar circles move on, the earth's surface that was once within the polar circle begins to rise and the elevated land becomes the new valleys, tablelands and mountain chains of the earth, and causes the one time sea bottom to become elevated into these new formations. His book, which will be published during this year, will give the evidence he has gathered during a period of many years, that tends to substantiate these statements.

He says concerning petroleum:

"There have been many discussions about the origin of petroleum, the mineral oil that we take from the earth in practically all parts of the world. Some geologists hold that it has its origin in chemical and thermal action of the minerals and rocks of the earth's interior. Others believe it to be the remains of vegetable and animal organic matter. Many geologists believe it to be mostly the remains of sea life, the greater part of it being the product of marine animal organisms. When the origin of petroleum is subjected to the light of pure reason, based on analogies of the known facts of nature, it becomes evident that the last mentioned theory is the more plausible one. That a clear understanding of this subject may be had we will present both sides of the argument and then attempt to show why we find petroleum in beds of sand at various depths in the earth.

"The geologists who claim that petroleum is the result of chemical and thermal action of inorganic matter will say they have produced petroleum by subjecting rocks and other forms of earth matter to heat and chemical action. The teachings of geology are more or less vague as to time when attempting to explain the earth's history. The only way we can determine time or how the changes on the earth have been brought about is by reasoning from analogy. We grant that petroleum can be produced from rocks and other earth matter, but no man can say that the oil molecule has not previously united with the earth molecule, and any molecular combination may be disassociated under certain conditions, and this division can be continued until the molecule is divided into the atoms that compose it. In other words, the oil may be the remains of organic matter, and uniting with the molecule of the earth matter may become a form of mineral, and this mineral will give up the oil molecule when it is subjected to certain conditions.

"It is impossible to know how many times the sea bottom has become elevated above the sea level, or how many times the rock of the mountain ridges and peaks has been the bottom of the sea for every part of the earth shows that this change of level has occurred more than once. To state that petroleum is the product of chemical action because petroleum can be produced from rocks and earth matter is as absurd as were other claims of the physicists of the last century who insisted that because heat produced motion it was a substance called caloric. Every one now knows that heat is the energy of molecular motion. Rocks are found in certain mountainous regions in the United States that show no apparent trace of petroleum under ordinary circumstances, but when the molecular motion of the rock is disturbed by sharply striking it with a hammer the odor of petroleum is at once evidenced.

"Let us now recall some of the phenomena pertaining to petroleum. Petroleum is usually found in beds of sand underlying shales. Great beds of sand can only be formed by the action of water on rock in the bed of a river, lake or ocean. The oil bearing sands are found at various depths in the earth, sometimes at no greater depth than from 200 to 400 feet. Others are found at from 800 to 1,200 feet and still others at 2,000 feet or more below the surface of the earth. Frequently when oil is found in the upper beds of sand, and the oil becomes exhausted, the well is drilled deeper, and oil may again be found below another strata of rock in a deeper bed of sand. This indicates that the bed of the ocean, lake or river has been raised up and depressed at various periods of time. The shales and various stratas of aqueous rock have been formed by the action of water acting upon the sand, clay and other matter of the earth. They have then again been depressed and a new layer of sand is formed on the bottom of the lake, river or ocean, and this rising and low-

ering has been going on for countless ages. The anticlines and synclines have undoubtedly been caused by the rising and sinking of the earth's surface.

"We further know that all plant and animal organisms have more or less oil in the living tissues and the principal function of oil in plants or fat in animals seems to be for the production and conservation of heat, that the sap of the plant, or the blood of the animal organism may circulate. The temperature of the blood of animals that live in water is the same as the medium that surrounds them, therefore it is of greater necessity for marine animals to conserve their heat than it is for land animals to do so and this accounts for the reason that a fish has more oil or fat than a land animal of equal size. The colder the water in which the fish lives the greater amount of oil that is contained in its body.

"Then the logcal conclusion would be that the reason we find petroleum in various layers of sand is from the fact that every part of the earth has been a sea bottom at various periods of time. Some force causes the sea bottom to rise up into islands or continents, while other islands or continents slowly sink into the sea, and the fat of the sea animals retained in the bottom sands is the oil we find which is known as petroleum. The bituminous asphalt base of this oil is the remains of the vegetable organic matter that is associated with it in its early state. The light oil found in mountainous regions having a paraffine base is oil that has been filtered through porous rocks from the action of the heat that produced the mountain chain.

"The geologists of today believe in the catastrophism idea regarding the earth, but Sir Charles Lyell, one of the greatest and most learned geologists of the last century opposed this doctrine and preached that the changes on the earth were constant. It is the writer's belief that Sir Charles Lyell was absolutely correct in his interpretation that the changes are taking place today in the same manner that they have occurred in the past. In an article of this length it is impossible to thoroughly explain how he believes these changes of level on the earth's surface are brought about but the oil driller will slowly learn that all sand deserts are the most recent sea bottoms of terra firma, and that the new great oil fields of the earth will be found in such deserts as the Mojave desert of the United States, the Sahara desert of Africa, and the other deserts of the earth that are not over 3,000 feet above the sea level, and that there is as much petroleum being made today as at any time in the past."

Effect of World-Wide War on Oil Trade

Confronted by the startling revelation that we, with other neutral nations, are standing on the brink of world-wide war, speculation is rife as to what the effect will be upon the commercial and industrial life of the country. Naturally, the first conclusion is that it will be, in a general sense, demoralizing; but the effects will differ according to the nature of the industry and the demand for its products in time of war as compared to the normal national demand, and this also compared with the present foreign demand with conditions favorable for exportation.

Little has been said concerning the effect upon the oil industry, despite the fact that it has come to be one of the most potent factors in our national life. Few, aside from those actively engaged in oil operations, have given the matter even passing consideration, although it is of vast importance, by reason of the real conditions that threaten to precipitate such war; that of interference with our foreign commercial relations. True, the demand for fuel and lubricating oils for our own navy would be about doubled, but this would not be comparable to the loss sustained by the interruption of our foreign trade. This, however, would be largely controlled by the extent to which the blockade was affected by the central powers.

At present the Texas fields are supplying a large proportion of the oil used by the British, French and Italian navies, aggregating about 500,000 barrels per month, or 6,000,000 barrels per year. The United States navy consumes about 500,000 barrels a year in time of peace which will be increased to about 1,000,000 barrels in case of war. Thus it will be seen that if the German blockade is effective, the demand for Texas oil alone would be 5,000,000 barrels a year less than at present. At this rate, it would be but a short time until storage facilities would be inadequate, resulting in a cessation of field operations in order to hold the supply down. Additional storage facilities would doubtless be provided to meet immediate demands in handling the production now in sight, but not to take care of an accumulation under abnormal conditions that would result from field activities such as have been outlined for the year, under the promising conditions existing at the beginning of the present year.

The unusual demand for crude oil during 1916, due largely to enormous exports, drew heavily upon oil stocks in storage at the various important fields. California fields showed a decline in oil stock of 13,110,861 barrels, the Texas stock reduction amounted to approximately 20 per cent and other fields experienced a demand in excess of production accordingly. These amounts are to be taken into account in the respect that this drainage on stocks will be stopped in the event of war and the consequent accumulation would be rapid. Another matter that would have a telling effect upon the industry is in the refined products. It is unquestionably true that in the event of war, a general retrenchment wave would sweep the country, and despite the rapid growth of the gasoline industry due to the automobile craze, even when the high cost of living is claiming so much attention, the demand for refinery products would suffer a decline that would figure materially in the amount of oil required for this purpose.

That the oil industry faces conditions that mean a reversal from unusual activities in producing circles to that of an over supply, with perhaps a decline in prices as a consequence, seems very evident and a cessation of such activities will doubtless be witnessed unless there is a modification of the German blockade order.

The Associated Oil Company has purchased half an acre of land in Hollister to use for tanks and buildings.

The Marina Oil Company is to drill two new wells on section 3, 29-21, in the Bellridge field.

The Pittsburg Bellridge Oil Co. is to start drilling a new well on section 30, 28-21, in the Bellridge field.

Standard Has New Officers

At the annual meeting of the stockholders of the Standard Oil Company, California, held at Richmond, March 8, the old directors were re-elected for the ensuing year.

At a meeting of the Board of Directors held immediately afterwards, a new office that of Chairman of the Board was created and Mr. D. G. Scofield was elected to fill that position.

The other offices were filled as follows:

Mr. W. S. Rheem, president; Mr. K. R. Kingsbury, vice-president; Mr. W. S. Miller, vice-president.; Mr. F. H. Hillman, vice-president and director of producing; Mr. R. J. Hanna, treasurer and director of manufacturing; Mr. H. M. Storey, secretary and director of pipe lines.

FOLLOWING IS THE ANNUAL STATEMENT OF PRESIDENT SCHOFIELD

In presenting to our stockholders the balance sheet of your Company as of December 31, 1916, your Board of Directors desire to congratulate you in having a most prosperous year in all the departments of our business. The balance sheet of your Company as of December 31, 1916, is as follows:

ASSETS

Plant Account	$72,010,645.24
Other Investments	99,369.36
Inventories	26,166,271.87
Accounts Receivable	8,031,708.44
Deferred Charges	445,508.58
Cash	2,646,755.47
Total	$109,400,258.96

LIABILITIES

Capital Stock	$100,000,000.00
Less Unissued Stock	25,470,016.91
Issued Stock	74,529,983.09
Accounts Payable	3,837,951.98
Stock Premium Account	250,000.00
Surplus	30,782,323.89
Total	$109,400,258.96
Earnings for year	21,263,520.02
Less depreciation	3,658,216.28
Net Profit	$ 17,605,303.74

SURPLUS ACCOUNT

Surplus January 1, 1916	$ 44,852,263.02
Lass Cash Dividends Paid	6,6,831,915.13
Less Stock dividend of $24,843,327.74	31,675,242.87
	$ 13,177,020.15
Profit for Year	17,605,303.74
Surplus December 31, 1916	$ 30,782,323.89

The earnings for the year after deducting all operating and marketing expenses were $21,263,520.02. From this we have written off for depreciation in all departments, $3,658,216.28, leaving the net profit of the business after depreciation $17,605,303.74, or about 16 3-4 per cent on the capital and surplus as of December 31, 1916.

Cash dividends were paid to the stockholders during the year at the rate of ten per cent per annum, amounting on the issued stock to $6,831,915.13, and a stock dividend of $24,843,327.74, and there has been carried to surplus account, $10,773,388.61, leaving the surplus account as of December 31, 1916, $30,782,323.89.

During the year our plant account was increased in all departments at an expenditure for new construction and additions to our producing holdings of $9,834,579.54. All the physical plant of the Company has been maintained in first-class condition and working efficiency.

During the year 1916, the crude oil production of the Company from its own properties was slightly over 13,000,000 barrels, or a daily average of 35,632 barrels, or an increased daily average of 3976 barrels over the production of 1915. The average daily production of December 1916 was 38,811 barrels. There was added to our producing properties during the year, 936 acres by purchase in fee and 15,601 acres in leasehold.

Our own stocks and crude oil and its equivalent in storage December 31, 1916, were 22,753,178 barrels, or a decrease of 3,928,886 over December 31, 1915.

The marine department added to its fleet the tank steamer "D. G. Schofield" of 80,000 barrels capacity, and the gasoline barge "Pico", for use in San Pedro harbor. The total number of bulk barrels transported by our fleet during 1916 was over 15,250,000.

The sales department added to its plant forty-two new sub-stations, and twenty-three service stations, and to its delivery equipment 329 autos and auto-trucks.

Our average daily pipe-line runs from wells during 1916 were 75,944 barrels, as against 90,715 for 1915. During 1915, we were exchanging with the Kern Trading & Oil Company (Southern Pacific Company) over 12,000 barrels per day of fuel oil for its refinable crudes, an arrangement that terminated on December 31st of that year.

Of the accounts payable, the balance due the Murphy Oil Company on the purchase of its property has been reduced to $1,000,000, half of which is payable during 1917, the balance in 1918. The Company had no other indebtedness, except the current accounts for December 1916, which were paid in January, 1917.

The cash balance on December 31, 1916, was $2,646,755.47.

During the year owing to the falling off in the general production, crude oil prices in California materially advanced, the base price as of December 31, 1915, being forty-three cents per barrel as against seventy-three cents per barrel on December 31, 1916, or an advance of 70 per cent. But in accordance with our custom, our own inventories of crude oil and products in storage on December 31, 1916, amounting to $26,166,271.87 have been taken at their costs and will appear in the profits as they are disposed of.

The total value of our sales of all products for the year showed an increase of 45 per cent over that of 1915, and notwithstanding our export sales of refined oil to the Far East were considerably diminished by lack of transportation, our general export business as a whole shows a very marked increase in volume over that of 1915, and reached a total of 22 per cent in value of our gross sales.

The Associated Oil Co. is preparing to drill a new well in section 29, 26-21, Lost Hills field.

G. J. Hansen has taken over the 80-acre Ida May tract in the Sunset field. Four wells will be put down.

New Legislation Proposed

Foremost in importance to the oil industry of California among the matters now pending before the legislature of 1917 is the bill relating to the control of the water infiltration problem in the various oil fields of the state. The bill was prepared tentatively by the State Mining Bureau and introduced in both houses of the Legislature. R. P. McLaughlin, supervisor of oil and gas, has sent copies to all oil operators, and has asked for a full discussion of its provisions and for any practical suggestions or changes which any one may have to offer.

With a view of assisting the Bureau and Mr. McLaughlin along these lines, the Chamber of Mines and Oil has taken up the matter of getting together the representatives of all the interests most concerned for a conference among themselves and with Mr. McLaughlin, at which they will set forth their opinions as to any changes which may be desired and of practical benefit, and put them in the form of amendments to be offered to the bill. Mr. McLaughlin has agreed to the conference and will be present. The first meeting will be held in Los Angeles and San Francisco.

The oil operators, one and all, consider the matter one of the most important that is before them—one of vital moment. Operations under the existing law during the past two years have proven the necessity for the elimination of unnecessary and unsatisfactory features, and many of the operators are dissatisfied with the proposed amendments already introduced. The necessity of some "water law" is conceded, and one of the most necessary steps is to place any law enacted beyond the danger of being declared unconstitutional by the courts, a danger which many lawyers believe is now within the range of possibility. It is chiefly for this purpose that the present bill has been introduced.

All oil operators desire the most workable legislation that can be devised, and to secure it they must confer among themselves and with representatives of the state, exchange views, and eliminate the chief objections to each provision. To this end, President M. H. Whittier, of the Chamber of Mines and Oil has called the proposed conference and appointed the committee named below to act in the premises.

The operators fully realize that power must be given the oil and gas department in order that they may be able to act promptly and efficiently when necessary while at the same time the law should fully protect the rights of every operator, avoiding all unnecessary hardship and eliminating any provision which might entail needless burdens.

At the preliminary meetings called by President Whittier, the following committee was appointed to draw up suggested amendments and to meet and confer with Mr. McLaughlin:

M. W. Whittier, Temporary chairman; W. W. Orcutt, Union Oil Company; W. B. Scott, Columbia Oil Company; John T. Wootan, Associated Oil Company; Felix Chappellet, General Petroleum Corporation; W. S. Smullin, Standard Oil Company; A. C. McLaughlin, Kern Trading & Oil Co.; Paul N. Payne, Honolulu Consolidated Oil Co.; I. W. Fuqua, American Oilfields Company; S. A. Guiberson, Jr., Independent Oil Producers' Agency; E. O. Faulkner, Chanslor-Canfield Midway Oil Company; Roscoe W. Stephens, Kern River Oil Fields of Cal. Ltd.

Representatives of the Shell Syndicate and of other leading operators, will be added later.

It will be seen that it has been the aim to have on the committee men representing the practical operating end of the oil industry, men who understand from personal experience the problems involved in actual field work. It is felt that they are the ones most capable of advising upon and dealing with the matter.

DEVELOPMENT OF RITTMAN PROCESS

One of the notable features in the current general expansion of American chemical industries is the evolution of the Rittman process for transforming a larfie proportion of the residues of our petroleum refineries into gasoline, benzene and toluene.

The process, originated in the Bureau of Mines and elaborated as an industrial method under the auspices of the same bureau, has now issued from the experimental stage and taking its position as a recognized industrial asset in the nation's cycle of productive activity. By its aid vast quantities of petroleum waste, hitherto available for little beyond fuel purposes, can be transformed at will either into gasoline for use in motor engines, or into benzene and toluene, also susceptible of the same utilization, but constituting likewise the crude material for the manufacture of the two coal-tar high explosives—picric acid and trinitrotoluene—and forming also the starting points for the synthesis of an almost endless variety of dyestuffs, medicinals, photographic chemicals, artificial flavors, and perfumes.

Under normal conditions in times of peace, the by-products of our coke ovens will more than meet the nation's demands in the manufacture of the latter categories of chemicals. The case is, however, far different in regard to the supply of motor fuel for automobiles, airplanes and motor craft. Apprehension is felt that at an early date the supply of gasoline from crude petroleum, or of benzene and toluene from distillation of coal may fall far behind the world's demand for motor fuel.

The Rittman process promises to relieve entirely this anxiety, or at least postpone all danger of a shortage to a very distant date. Economically it will act as a healthful check upon any unnatural tendency to increase the price of ordinary gasoline. The process as now perfected, makes it possible to produce gasoline at a cost of 6 cents per gallon. This figure may be contrasted with the current wholesale price of 22c. per agllon for gasoline obtained directly from petroleum refineries.

The process is thoroughly protected by patents. Manufacture in the United States is permitted without payment of license fees or royalties. Manufacture abroad is permissable under the patent rights secured in the different countries on the payment of fixed license fees. The American company controlling the patents is now actively engaged in introducing this new and distinctly American process in the leading foreign countries, where its advent is warmly welcomed. The establishment of the new industry in various quarters of the globe offers naturally an exceptionally admirable opportunity for American constructors to furnish the requisite plant and equipment.

There is every indication that at an early date the American Rittman process will be installed in all lands where petroleum refineries exist and will exert a widesprad influence upon the rapid evolution of all phases of transportation—terrestrial, aerial, and marine— dependent upon an abundant supply of gasoline.

California Derrick

The Oil Authority of the Pacific Coast

PUBLISHED MONTHLY
—BY—
The California Derrick Publishing Company
DR. CLARENCE E. EDWORDS .....Editor
E. L. MACKEY ..... Business Manager

OFFICES
509 Sansome Street, San Francisco, California
Telephone Sutter 2984
Editorial Rooms 417 Montgomery St., Room 422
Telephone Douglas 3617

Subscription price, per year, $2.00 **Foreign $2.25**
Advertising Rates on Application
Entered as second-class matter February 17, 1912, at the postoffice at San Francisco, Cal., under the Act of March 3, 1879.

THE DERRICK'S CREED

The California Derrick has no axe to grind, no company to promote, no stocks to sell, no "interests" to bow to. Not dominated by any company, but faithful to California's Oil Industry.

WELL 29 YEARS OLD IS STILL FLOWING

Newhall, Calif.—Back in Pico canyon an old well drilled by the Hardison-Stewart Oil Company 29 years ago to a depth of about 1200 feet is still flowing oil of 30 gravity at a rate of about a barrel a day. The ancient casing is still in the hole which was recently visited by several operators interested in the Newhall district who were attracted by the sight of the oil on the surface of a tiny stream of water and followed it to its source. The land is now held by the Standard. It is not being developed at present. The Standard has an extensive acreage which it is apparently holding in reserve for the time when light oil may be worth more.

INDEMNITY FOR ROUMANIAN OIL SOUGHT BY STANDARD

The Standard Oil Company will seek indemnity for destruction of its oil properties in Roumania at the time of the German invasion of that country.

Standard Oil officials declined to indicate what government or governments they believed responsible for the destruction of the properties worth many millions of dollars. It is understood they have taken up the question with the State Department at Washington.

According to cable reports from London, a commission of the entente allies headed by military officers, had destroyed all the oil properties in Roumania ten days in advance of the capture of the fields by the Germans. The value of the wells, equipment and oil in storage, it was stated, amounted to fully $150,000,000.

OPPOSE GASOLINE STANDARD

Oil men believe that should laws providing for the standardization of gasoline be enacted, the price would advance immediately. It is the concensus that this legislation would not affect the earnings of the oil companies, for while the price would advance the amount sold would be much smaller. Leading oil interests claim that at present the demand for gasoline is nearly equal to the supply. Standardization would decrease the supply, while the demand is continually increasing, this together with the fact that the petroleum resources are decreasing would place the gasoline market in a perilous condition.

During the recent meetings of the U. S. Bureau of Mines and the U. S. Bureau of Standards held in Washington, Guy Stephens, of New York, counsel for the Texas Co., stated that the position his company would take in the matter would be:

"First and foremost, the Texas Co. would stand back of the other oil interests in that there should be no legislation for the present, but that if legislation was bound to come let it be sound and rational.

"Our ideal for form of legislation is to have government specifications as per grade A and B. Grade A would not have less than 25 per cent distilled at less than 225 degrees Fahrenheit. Not less than 50 per cent at 340 degrees and not less than 90 per cent at 400 degrees. This would give the consumer a gas that would work with satisfaction in motor cars as now built. Grade B would have not less than 25 per cent distilled under 265 degrees, not less than 50 per cent under 360 degrees and not less than 90 per cent under 400 degrees.

"Our idea of the way to secure uniformity is to have all states hold up legislation until bureaus are ready to make recommendations, then have the bureaus draft a uniform law to be enacted by all the states."

It would cost over $100,000,000 to equip cars now in use so they could use poorer grades of gasoline. Oil interests do not want legislation for the present at least.

MEXICO HAS ENCOURAGING POLICY

The Mexican government realizes the importance of the oil industry to that country, and although no special department has been formed to handle oil affairs, the government is well informed regarding petroleum conditions of the entire world. The Mexican people in the oil districts have become tired of the revolution and are eager to settle down and work the oil fields.

According to a member of the Mexican consulate, the Mexican government will not hinder foreign oil interests in that country so long as they abide by the Mexican law. There are two ways by which foreign concerns or individuals may secure oil lands in Mexico. One is by purchase from a previous holder and the other is through the purchase of government lands at a nominal sum. It is the belief of Mexican government officials that the petroleum resources in Mexico some day will be developed to such an extent that Mexico will be a leading oil producing country of the world.

Mexico invites foreign oil interests to that country, and the government will provide protection for oil lands so long as the company or individual lives up to the oath taken when securing the land. Those in the oil business in Mexico must swear they will abide by the Mexican law and never call on any other country to interfere in any manner whatsoever. This point is strongly emphasized and is the only thing the Mexican government considers when a foreign concern enters the oil business in that country. At present there is no danger of raiding or other perils that may arise from the condition of the country in any of the important oil districts, in the opinion of officials.

Regarding the recent articles printed in the American

papers stating that Carranza would respect any concessions made by the Madero or Diaz governments, the Mexican consulate here states that the policy followed in this matter is that all laws made regarding oil lands shall be considered as pertaining to the future, and all concessions made in the past will be lived up to.

It is estimated that production of the leading oil interests of Mexico during 1917 will greatly increase. One well of the Mexican Petroleum Co. ought to produce a quantity equal to 5 per cent of the oil produced in this country. At present the petroleum outlook in Mexico is bright.

LANE URGES RELIEF FOR CALIFORNIA OIL

Secretary of the Interior, Franklin K. Lane, has written a letter to Senator Myers, chairman of the Public Lands Committee of the United States Senate, urging him to put through congress the mineral lands leasing bill, which contains the amendment giving relief to California oil operators ousted from Naval reserves by the Taft withdrawal order. The letter says:

"In view of the general realization that it is now time to make plans for national defense, I take the liberty of suggesting that you consult with the chairman of the committees on military and naval affairs to see if it is not practicable to have the lands which are at present locked up, containing oil, phosphate and potash, released under a leasing system.

"We have 6,000,000 acres of possible oil lands so withdrawn that no wells can be bored upon them Only the lands now held in private ownership are producing. We should be about the business of discovering what these withdrawn lands contain.

"Gasoline is invaluable to the Army and to the Navy, as well as to every automobile owner and to the owner of every other gasoline-driven engine in the country. The largest deposit of potash in this country, which is fundamental in the manufacture of explosives, is also out of use because withdrawn, and we have some 3,000,000 acres of phosphate deposit in the same situation.

"The development of these resources can be made effective by the passage of a leasing bill.

"As to the procuring of more extensive oil reserves for the use of the Navy, would it not be practicable to authorize this department, or some other, to drill for oil upon some of those great reserved tracts which have not been already proved? The expenditure of a comparatively small amount of money might in this way secure for the Government an insured oil supply, as well as be an effective regulation against increasing prices."

With only three weeks of this session remaining, and the Senate Democratic caucus as yet unable to agree on allowing the leasing bill to be considered, California oil men here are alarmed at the situation regarding relief at this session for the California claimants.

There are reports in circulation that Secretary Daniels seizing on the German crisis to bolster up his opposition to the relief provision, on the pretext that if war comes all the oil in naval reserve No. 2 will be needed more than ever before for the Navy, is redoubling his efforts to prevent the leasing bill coming up in the Senate.

Sixteen Oil Co. of Los Angeles, has incorporated with capital stock of $100,000. E. L. Baker, N. L. Pettit, M. Krels, A. Ayer and L. Royce are the incorporators.

The General Petroleum is preparing to drill a well on the Fullerton water front.

Mr. Motorist—

Here is a Message for You!

YOU get SERVICE when you fill with Red Crown Gasoline, and you continue to get service as long as the filling lasts. Red Crown has power in every drop, and the last drop is as good as the first. It owes its superior quality to unexcelled manufacturing processes. Red Crown is not a mixture; it is a straight distilled refinery product made from selected California crude by refiners who have at their command every facility known to the industry. If you don't already use it, give it a trial. The next time you fill, turn in at a Standard service station and see what a difference it makes.

Dealers Everywhere and at our Service Stations.

Standard Oil Company
(California)

News from the Field

Taft.

The Combined Oil Company is increasing its output through cleaning and redrilling its eight wells on section 14, 31-22.

The General Petroleum Company is preparing to drill a wildcat well in the Dominguez district, near San Pedro, the drilling to be done by contract.

The Victor Oil Company is to start drilling on No. 5 well on section 35, 32-23, in a few days. The derrick has been up for several months.

Though the Mascot Oil Company has forty two wells on its property on section 26, 32-23, which have been producing for the past eight years, the company is getting a heavy production from new holes drilled in the immediate vicinity of the old wells.

Maricopa.

No. 33 well, which is the last hole started by the Ethel D. Oil Co. on lease on section 36, 12-24, has been drilled to a depth of 820 feet. It is expected that the well will be completed to oil sand at 1300 feet on record time.

The Standard Oil Co. took over leases of the Sunset Monarch Oil Co., in the Sunset and Midway fields and assumed actual control by placing its men in charge of the work and producing wells. These properties are some of the oldest being operated in the West Side field.

A nw well is being started by the Lakeview No. 2 Co., near the once famous Lakeview No. 2 gusher. This is to be known as No. 11 well. Drilling on the old Lakeview gusher indicates that the well will soon be in good shape for rapid drilling.

McKittrick.

Extensive development work is now in progress on properties of the Standard Oil Co. in the McKittrick, Midway and Sunset fields, and those who have been watching developments believe that great development will come with the spring.

A company has been formed and submitted to the board of trustees a plan for lighting the city with natural gas. A franchise has been asked for and the company proposes to begin laying mains within a month.

The El Camino Oil & Development Co., whose lease is in the Midway field, where several big wells are being operated, is redrilling wells Nos. 8 and 10, in section 26, 31-32. The company has levied an assessment of three cents a share upon the capital stock.

The Midway Oil Co. has sold to L. B. Tannehill the northwest quarter of the northwest quarter of section 34, 12-24 in the Midway field.

The Chanslor-Canfield Midway Oil Co. (Santa Fe), which has entered upon a vigorous campaign in the matter of drilling new wells in the Midway district, is testing water shut-off in five wells.

The Associated Oil Co., which engaged in redrilling two wells in the Mc Kittrick district, is doing similar work in the Kern River field wth two wells in the Midway with one, and in Coalinga with one.

Considerable development work is being done in the Casmalia field in the Santa Maria district. Among the new ventures are four wells being sunk by the Doheny-Pacific Oil Co., one in section 19, 9-34; two in section 13, 9-35, and one in section 23, 9-35. The Pinal Dome Oil Co. is drilling a new well in section 26, 9-35, and another in section 22, 9-35, in Cat Canyon.

The Standard Oil Co., has acquired the northwest quarter, the northeast quarter, the southwest quarter and the southeast quarter of section 30, 32-24, formerly owned by the Big Four Oil Co. and located near Buena Vista Lake.

The Marina Oil Co., which has recently added to the development of its property in the Belridge field by drilling several wells, is to further add to the number by sinking three holes in section 3, 29-31.

On section 24, 26-20, in the Lost Hills district, the California Star Oil Co. will soon drill a new well, thus increasing an already good list, which has testified to the progressive policy of this company.

The H. S. Williams Oil Co., on whose lease on the North McKittrick front there have been brought in several good producers within the past three or four months, is preparing to deepen well No. 17.

Coalinga.

Between 300 and 400 new wells are planned by the big companies interested in this field. Freight yards are crammed with material, and trucks are hauling out derrick timbers to new locations every day.

The Shell Oil Co. is planning to spend $1,000,000 in the Coalinga district this year. Preparations are under way for building 100 new derricks.

The Zier Oil Co. on section 1, 20-14, with well No. 16, is down 760 feet. The well will be completed at about 900 feet.

The Associated Oil Co. on section 8, 21-15, has well No. 2 cemented at about 2700 feet. It is estimated that the producing sand will be encountered at about 2900 feet.

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The Canadian Coalinga well No. 1, southwesterly from the Associated well, on the same section, which was drilled to 2895 feet, came in with a strong gas pressure with a light gravity oil, and has been a steady producer. The well has made from 2800 to 3000 barrels a month, and is doing so now.

The Associated well No. 1 has been a steady producer of about 60 barrels a day, pumping daylight. The oil is about 18 to 19 degrees gravity.

The Valley Oil Co., on the southwest quarter of section 32, 20-15, well No. 1, is being overhauled and will be put on the producing list. This property adjoins the city of Coalinga on the west.

The Homestake Oil Co., on section 26, 20-14 is drilling a test well trying to reach the lower sand. It is the intention of the management to go down 2000 feet if necessary, to get the pay sand.

The Homestake well is about 1635 feet deep at present, and is in oil sand that looks very good. Geologists who have looked over this section of the west side field say that there is under this sand the sand that is being produced from in section 6, 21-15.

The Maine State Oil Co. has closed a contract with the West Coast Drilling Co. to drill well No. 13, located on the east side of the lease, on the west half of the east half of section 31, 19-15.

The Standard Oil Co. took over the Coalinga Peerless Oil Co. in January last, being the northwest quarter of section 22, 19-15, 160 acres, with 22 wells drilled. This property was developed by the late J. M. Wright, a lawyer and promoter. It is a producer of very light gravity oil.

The Kern Trading & Oil Co., on section 35, 19-15, will spud in well No. 26 this week. The West Coast Drilling Co. has a contract to land the heavy 11-inch casing at about 2700 feet. The hole will be completed with cable tools.

San Juan Field.

Much interest is being taken in development in the San Juan district in the eastern part of San Luis Obispo county. It is reported that the Standard Oil Co. has just taken over some 20,000 acres just west of the town of Shandon, and will begin wildcatting there in a short time. This property lies about eight miles west of the property of the Co-operative Oil Land Subdivision Co.

W. F. Carlston and Clarence J. Berry have taken over several thousand acres of land on the western edge of the Carriso plain and will begin work as soon as supplies can be taken in. Following is from a local correspondent at McKittrick:

"The opening of a new oil field in the Carissa Plains region of San Luis Obispo county is foreshadowed by the leasing of several thousand acres of land to a syndicate of prominent citizens of San Francisco and other cities, among them Clarence J. Berry and Carlston, who have long been identified with the petroleum industry in California. Berry and Carlston hase just returned to San Francisco from an inspection of the various properties taken over under a lease, covering a term of years, to make preparations for the development of the extensive area.

"The Carissa district embraces that territory in San Luis Obispo county situated southeast of La Panza and bounded by the Temblor range and the Santa Maria or Cuyama river. The nearest of the tracts acquired through lease by Messrs. Berry and Carlston and associates is located about eighteen miles northwest of McKittrick, and all tend toward the Bitterwater country. To the south in these lie the lands in which prospect wells were drilled years ago, and in some of which small quantities of oil were found, but no commercial quantities were secured. Several of these holes were explored by the R. M. Smith Oil Co., in section 22, 23-26, and in section 27, 30-20; others were drilled by the Union company in section 6, 32-22; while still other holes drilled, these being known as the R. M. Smith, the Cree, the Eureme and the Sperry or Vishnu wells, were given attention by different concerns or individuals. The traces discovered in the R. M. Smith and the Eureme wells were of good quality oil, testing about 22 degrees, brownish to greenish in color and having little viscosity. This petroleum, in one well, was located at less than 200 feet below the surface. The quality of the oil in the Sperry well was of 30 degrees gravity.

PETROLEUM RESOURCES RAPIDLY DIMINISHING

At a meeting of American mining engineers in New York it was stated that the petroleum resources of this country are rapidly diminishing. Already 36 per cent of the petroleum resources of this country have been exhausted and oil experts claim that within thirty years the present supply will be entirely exhausted. Large oil interests have foreseen this disaster and have spent hundreds of thousands of dollars annually to develop new fields in this country.

The Stewart Oil & Gas Co., of West Virginia, has incorporated at Phoenix, Arizona, for $1,000,000.

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Oil Bureau Work

The Bureau has lost one of its most valuable assistants through the resignation of R. B. Moran, who has been in charge of the oil field work of the Los Angeles office. Mr. Moran leaves the State service for the purpose of resuming his private engineering practice and attending to oil operations in which he was previously engaged. The vacancy has been filled by transferring M. J. Kirwan from Coalinga to Los Angeles, and promoting other engineers already in the State service.

Conditions prevailing during the first year's work under the present law made it necessary to inspect a great number of wells which were in bad condition. Recently it has been possible to take up considerable old work which has been the subject of complaints—both formal and informal.

The first formal order of the State Supervisor has just been issued in reference to the Creme Petroleum Company well No. 1, on Sec. 30, T. 20-S, R. 15-E, in the Coalinga field. The condition of this well has been the subject of comment in that locality for several years, and a serious water condition has been found to exist in neighboring wells. However, careful examination of all the data presented has failed to definitely locate the source of the water, and the Supervisor has ordered further inexpensive tests at several operating wells. This is in accord with the previously announced policy to not order a well plugged until it was shown, with reasonable certainty, to be the source of the water rather than being merely situated in a water channel supplied by some other well. Extremely good records were presented by most of the operators here involved

A formal complaint has been filed against the San Francisco Midway Well No. 2 on Sec. 24, T. 31-S, R. 23-E. in the Midway field and the matter is being investigated.

An informal complaint by the Traders Oil Co., against the Indian Colonial Development Company on Secs. 22 and 23, T. 32-S. R. 23-E in the Midway field has been partly investigated and work of plugging one old well has been commenced without the necessity of a formal order. This is a part of the large water problem which for several years, has been troubling operators on Twenty Five Hill, and will doubtless call for considerable more repair work.

The Bureau recently finished an investigation of problems submitted jointly by the Alma Oil Co., the Associated Oil Co. and the Santa Fe Ry. Co., on Sec. 4, T. 29-S. R. 28-E in the Kern River field, and upon the report made by the engineers, repair work is expected to be commenced by owners of several wells.

A complaint of the Sunset Monarch iOil Company against the American Oilfields Company in Sec. 32, T.32 S. R. 23-E. in the Sunset field, is now under investigation, complete records being gathered.

A complaint of the Sunset Monarch Oil Company the Bear Canon Oil Company and the General Petroleum Company, on sec. 2, 3-10 in the Brea Canon field, is at present the subject of investigation and complete records are being required of the various operators.

CALIFORNIA PETROLEUM

The belief is expressed that California Petroleum preferred will be put back on its regular 7 per cent annual dividend basis. Earnings in the past year are estimated to have run close to 8 per cent. The outlook for 1917 is held to be better, as old contracts will expire and higher prices will be obtained for crude oil. Figured on this basis it is thought that the company will show around 12 per cent on the preferred stock in the current year. Unpaid dividends on the preferred aggregate five and a quarter per cent.

The Hauhuth well at Vallejo, is down 1840 feet. Oil is expected at 2000 feet.

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WAR HELPS OIL INDUSTRY

The petroleum industry of Europe has been seriously hurt by the war, most noticeable in Roumania and Galicia, as a war measure, in the Galicia field 229 wells out of a total of 319 wells were set on fire by the Russions, also 2,300,000 barrels of oil in storage was burned. The wells were not a total loss. The Germans set to work a large force of men on the wells, and over one-half were in a measure restored and made to produce, which materially assisted the Austro-German armies. Many refineries were repaired and employed in making gasoline for the army. The production of Russia fell from 28.09 per cent of the world's production to 16.05 per cent in 1915, and a further decline in 1916. These conditions have directly benefited the American industry and increased shipments of fuel oil have been made from ports along the Texas coast for the English and French navy. The United States navy department has eight battleships using coal and oil and three large battleships are equipped to use fuel oil exclusively. The navy program for the new battleships building and those contemplated for 1917 and 1918, are to be oil burners exclusively. A number of torpedo boat destroyers now building and those authorized by acts of Congress will use oil exclusively. It is estimated by the department that the United States navy will use at least 55,000,000 gallons of fuel oil for 1916-1917, and that 1918 will show a marked increase over that figure.

DEMAND FOR BENZOL AND TOLUOL

In pure benzol, the contract buying for the calendar year of 1917 by manufacturers of phenol both domestic and foreign, has been carried further, according to a metal trade paper, which adds: "Some large contracts have been closed within the past week calling for many thousands of gallons, and some of these have been renewals of business which expires with the current year. It now is estimated that approximately three-quarters of the 1917 production of pure benzol has been sold. Prices are steady around 55c per gallon for both spot and contract. Toluol has become very scarce as the result of the heavy recent buying in which Canadian manufacturers of trinitrotoluol have figured largely. Some additional sales of the past week have cleaned up the supplies. The total for war purposes continues to be sold at a marked advance over that which is to be devoted to the arts of peace. Contract prices are from $1.60 to $1.75 per gallon, and spot from $1.75 to $2.00, depending on the quantity. Phenol, in which there has been large contracting for export by manufacturers of picric acid, is steady at 55c to 60c per pound. Forward supplies are well sold up. Spot phenol is quoted at about the same prices as contract, but some small sales at 50 cents are noted."

---

75 OIL TANKERS BUILDING IN UNITED STATES

Judging by number of tankers under construction, the big oil interests look forward to a considerable increase in their foreign business. The Standard Oil Company of New Jersey leads the list in the number of tankers now being built. At present American shipbuilders are working on seventy-five tankers, the majority of which are near completion. Fifteen tankers with a gross tonnage of 92,679 tons have been ordered by the Standard Oil Company of New Jersey, which since November, 1916, has launched six additional ships of a gross tonnage of 50,690 tons. The remaining sixty vessels, with a gross tonnage of 283,180 tons, have been ordered by miscellaneous companies.

There are several reasons to which this large increase can be attributed. The commandeering of oil carriers by the British Government forced American oil interests to build additional ships in order to transport oil. Further opening up of the Mexican oil fields placed an added demand on tank steamers. The increase in demand for American oil in Europe through the closing of Russian and Roumanian oil fields also warranted the building of more steamers.

Many of these boats will be launched within the next three months and practically all of them before the end of the year.

JAPAN'S CONTRIBUTION TO AMERICAN OIL SUPPLY

Among the exports of various commodities from Japan to this country invoiced at the American Consulate at Kobe in 1916 with few exceptions the greatest percentage of increase, as shown by comparison with the figures for the preceding year is found in connection with shipments of oils as indicated by the following table:

	1916	1915
Camphor oil waste, lbs	3,573,254	2,937,912
Castor Oil, gallons	210,670	
Cocoanut, pounds	2,910,835	330,902
Cottonseed, pounds	3,430,409	76,220
Fish, gallons	1,374,330	10,000
Peanut, gallons	1,457,974	
Rapeseed, gallons	483,000	104,088
Soya bean, pounds	72,417,616	12,065,830

The enlarged exports of camphor oil are accounted for mainly by the increased consumption of it in this country in the manufacture of safrol to make up the deficiency in American supplies of the latter commodity, caused by the cutting off of imports from Germany. Kobe, which exported no castor oil to this country in 1915, sent us 210,670 gallons last year, which is explained by the scarcity of American-made oil as a result of curtailment of castor bean shipment from the Far East. So also the much more remarkable gain in the Japanese cocoanut oil shipments was the result of the necessity forced on American consumers, notwithstanding the greatly increased home production of that commodity, to seek other sources of supply to replace those lost by the British embargo on exports from Ceylon and Colombo. The boom in cottonseed oil

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afforded an opportunity for Japanese crushers, of which they availed themselves to the extent of an increase of over 900 per cent in the 1916 shipments through Kobe to the United States, on those made in the preceding year. Shipments of fish oil showed a similar gain, while of peanut oil Japan, which exported none to this country, by way of Kobe at least, in 1915, sent us nearly a million and a half gallons last year to assist in meeting the immensely increased American consumption of this oil for eating and mechanical purposes.

One of the most remarkable items in the above table is the increase of over 500 per cent in exports of soya bean oil from Kobe to this country last year, compared with those made in 1915. This was attributable to a heavier demand for bean oil from American consumers than was ever before known. But notwithstanding this great gain in supplies from Kobe, and increased receipts from other sources, stocks of soya bean oil in American markets are in a state of depletion, approaching exhaustion, and there is said still to be a large unsatisfied demand which has impelled consumers to recently pay prices for spot stock that are four to four and a half cents a pound higher than those prevailing a year ago.

MEXICAN CONDITIONS ARE NORMAL

onditions in the Mexican fields are back to normal. Practically all of the Americans who came out because of the war scare last summer have returned and a great deal of progress now is being made by the big companies.

Reports of operations for last year show that production and shipments reached high marks in the last months. Shipments by the Penn. Mex. Fuel Co., a subsidiary of the South Penn. Oil Co., were close to 400,000 barrels in December, which were the largest for the year, with the exception of June, when slightly more than 400,000 barrels were sent out in haste because of troubled conditions.

Shipments by the Mexican Petroleum Co., in the latter part of last year, averaged close to 45,000 barrels a day. This company is rapidly increasing its shipments from Mexico, despite difficulties in getting tank steamers. New additions to its fleet this year will put the company in the position of being one of the largest wholesalers of oil in the world. Its plans call for the marketing of 25,000,000 barrels of oil a year within the course of a few years.

In face of exceedingly trying conditions, the big oil companies operating in Mexico have succeeded to a surprising degree. For the most part these companies have been compelled to take independent action to protect their property. While a great deal has been said of the depredations of Mexican bandits, the fact remains that the big companies, through their own methods, have maintained their property and business there.

NEW SUBSTITUTE FOR GASOLINE

The latest product to be proposed as a substitute for gasoline is thus described in a dispatch from Miami, Fla.:

"Alcogas is the latest liquid manufactured to be used for the propulsion of automobiles instead of gasoline. Chas. Abbey is the inventor, and Carl G. Weiderling of Fort Lauderdale, Fla., is backing him in his efforts to get the fluid on the market.

"The new gas is being manufactured in small quantities in an improvised plant. The liquid is composed largely of alcohol, which is manufactured from green corn stalks or any other sort of green vegetable matter.

"Mr. Abbey is a chemist of considerable note, having for many years been employed by the pure food department of the Hungarian government. In his experiments here Mr. Abbey started the engine of a new automobile with the liquid without first heating the engine. The automobile was driven several miles, and apparently as much power was obtained from alcogas as would have been secured from the gasoline. The burning of the alcogas did not leave carbon in the cylinder.

"The inventor claims to be able to manufacture alcogas at a cost of five and a fraction cents a gallon. Some adjustments of automobile carbureters are necessary before changing from gasoline to alcogas. More complete experiments are to be conducted with the fluid shortly at a big automobile manufacturing plant in the east."

INDEPENDENT OIL PRODUCERS NAME HIGH PRICES

At a meeting of the Independent Oil Producers at Bakersfield recently it was decided that the agency propose the following terms for the sale of its oil to the Union Oil Co. for the next five or ten years. From January 1917, agency members to receive 73 cents a barrel instead of 50 cents a barrel at the well, until such time as field prices advance which means until the Standard raises its rates. Whenever such field rates are advanced, the members of the agency will have their rates advanced to the same level. In event, as the prospect indicates before the expiration of the present contract, the price to members (the market price paid by consumers, less cost of transportation and marketing) shall be in excess of field prices, members may elect to take their return upon the basis of agency returns from consumers. It is also thought a way may be found in course of final readjustment and extension of the present contract to allow the agency to enter upon the refining business as a partner of the Union. In event a member of the agency elects to take field prices when they are higher than those of the agency, and at the end of the present term, to leave the agency, compensation from him to the Union will be necessary, and will be determined according to the plan tentatively suggested by M. L. Requa. The Union has still to accept the terms, but it is thought that it certainly will do so.

Our Banking Strength.

The New York "Times," in an editorial headed "Our Banking Strength," says:

If our financial situation is so extravagantly strong as is commonly stated, that fact might produce a feeling of overconfidence. It is worth bearing in mind that any banking and financial situation is good only so far as it reflects the commercial situation, and that the commercial situation is the better worth consideration. Profits are current income, and may be renewed as often as spent. But they cannot be spent unless they can be renewed. The immense banking resources which reflect the phenomenal profits of the current situation would vanish like the dew unless care were taken for their protection. There are billions available under wise administration, but nothing to waste without proportional penalty. That the strength of the situation is due to current profits best appears from the fact that since June, deposits in all banks (except the Federal Reserve) have increased from twenty-one billions to twenty-six billions, while the loans have increased only from fifteen billions to $71,849,000,000. That indicates expansion, not inflation, just as surely as the increase of loans faster than deposits would indicate contraction of resources.

The soundness of the situation appears further in the fact that if the resources of the Federal Reserve Banks be added to those of the other banks, there has been an actual increase of banking cash in addition to the maximum of cash in circulation. It is a sure proof that the country does not need more money.

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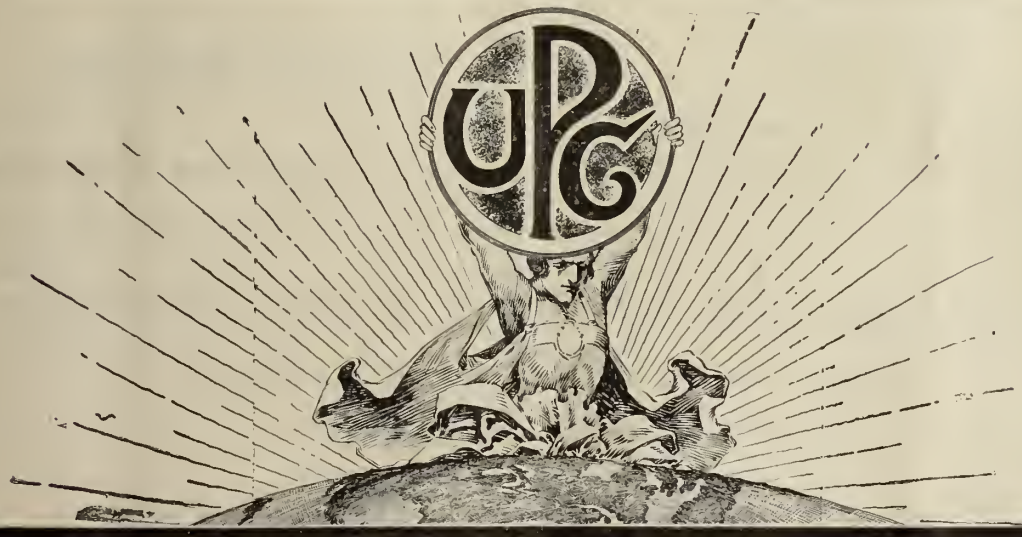

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Politics, Patriotism and Profit

The "Three P's" are rampant, just as always when danger threatens a country. It is fortunate that humanity is the same the world over, otherwise we might come in for contempt because of the early evidence of politics and profit in connection with our patriotism.

One might make an interesting enquiry, for instance, into the connection between those who are so vociferous in their demands for the commonizing the flag and the manufacturers of the National emblem.

Our country is at war. It is one of the most solemn occasions in our history, yet there are those, and many of them stand high in the financial and commercial councils of California, who hysterically demand that everybody shall buy and display a flag. One result is that our streets have taken on a gala appearance when we really should be in mourning.

It is not necessary to give outward display of patriotism, yet these victims of hysteria seem to think that this is the only way, for there is no record of their rushing to the recruiting office, except vicariously through their employees, and taking the oath to protect and defend our country.

If the munitions makers and their backers had anything to do with bringing on this war, the flag makers and their backers appear to be equally as patriotic, for revenue only.

But it is not only the munitions makers, flag makers and other commercialized war makers who are bringing shame to our country in this time of stress. The politicians we have always with us and they are especially in evidence just now. We have suffered from the actions of demagogues who pose as patriots because they froth at the mouth and denounce everybody who has a different opinion, but these are men who help to relieve the gloom because of their clownish antics.

The other politician patriot, however, gets by, because the hysteria of the nation has prevented it from analyzing actions. Take the spectacle of a San Francisco politician, for instance, rushing to become an "honorary" member of a militia company. (We almost wrote that "onery") Why does he not become an "active" member? Are his interests of any more importance than those of the humblest of our citizens? Because a man has money and holds high position does it exempt him from doing his patriotic duty even as those whom he attempts to incite to enlistment?

It is a sorry spectacle indeed when the men who have the most to protect and who have the most cause to defend our country make a travesty of their patriotism by putting politics or profits first in their thoughts.

And they think the people "fall for it."

That is where they make their grave mistake. The American people, having been taught to think, think. In thinking they reason. Possibly this is the solution of the query so often heard these days, of "what is the matter with the people? Why do they not enlist?"

The reason is that our people are thinking people, and they have reached a period where the mouthings and ravings of the patriots for profit have no further influence.

But if any one be led to false impression as to the true patriotism of the great, thinking American people, they will wake up to find themselves grievously in error. Our country is full of patriots who place their patriotism above the dollar, and who, in time of stress, may be counted on to the last drop of blood. But they will not answer to the hysterical appeals of those who show their patriotism by display of flags and by rising when the band plays the national anthem, or some other inspiring tune, if they do not happen to know our national anthem when they hear it.

Let there come danger to our land and there will be more people ready to defend it than the government can take care of. It is not the people who are unready. It is the government.

If a million men were to enlist tomorrow it would be months before there would be uniforms, arms, ammunition, accoutrements or provisions ready for them. But the people of America do not feel called upon to take up the Utopian ideas of President Wilson, who has announced that it is our duty to go across the Atlantic and teach Germany what kind of a government she must have.

We are in a "state of war."

We ask in all seriousness, "What for?"

President Wilson puts his war attitude on the broad and high ground of working toward the Democratization of the world. Had he put forth that doctrine before election would he now be president? We believe not.

Is the United States called upon to shed the blood of millions of her best citizenry to accomplish this?

Have we no stronger position before God and before humanity than this?

Is it the province of this great, peaceful, prosperous country to force a change of governmental form in other

nations because of our belief in the brotherhood of man and political equality?

What does England, or Italy really think of this excuse for our entering into a war with the "German government?"

When President Wilson says we are going to war with the German Government, but not with the German people, how is he going to separate the sheep from the goats? If the sheep decide to stand by the goats what are we going to do about it? Are we going to take it for granted that the German people are in a state of slavery and are we going to compel them to overthrow their government?

If Germany has been secretly working to injure the United States, if she has tried to allign other nations against us, if she has harried our traffic on the high seas and interfered with out national rights, then we certainly have sufficient grounds upon which to base a state of war, and we need no specious, far-fetched "humanity" idea to justify our action.

Let President Wilson tell the nation in specific terms what Germany has done and when and how, and the nation will feel more unified and stronger in its stand back of him.

We are back of him now, even though we be blind followers, but there would be a stronger and mightier force if we felt that we were justified in our quarrel. We are a thinking people. We have come into our birthright of thought and are, in consequence, strong and faithful to the end. As individuals we make a successful war possible, and as individuals we will sink ourselves into a homogenous whole.

But tell us what we are fighting for and why. We have the right to know. Words and phrases that roll nimbly off the tongue may catch the ear of the unthinking, but there are some of us who want more than words and phrases—we want facts and reasons.

Take the Nation into your confidence, President Wilson, and you will be better served.

We have always prided ourselves upon the fact that we are a nation of free speech. This being true it ill becomes any of us to question the sincerity or the patriotism of those who are not satisfied that it has been unnecessary or best to enter into this war. Calling Senator La Follette, or Senator Stone a traitor is but another way of putting a gag in the mouths of those who have been taught their right to think and to express their thoughts.

There is opposing this war, many a braver man than a majority of those who are using it for political or commercial reasons, and there is many a truer patriot who speaks his mind freely in opposition to hysteria than is to be found on the platform mouthing his platitudes and demagoguism.

When a man is forced by an angry mob to salute the flag he is not made a better citizen. He is made a worse one for fuel has been put on a smoldering fire and he becomes an active antagonistic force where he would have been either passive or active for the country.

Because a man does not rise in a theatre when the Star Spangled Banner is played by the orchestra it does not always mean that he is not patriotic. He may be a cripple or an invalid.

But our unreasoning, hysterical "patriots" think it a good time to show their bravery and patriotism and they drag him from his seat and make him stand up. If a German attempts to say a word in his own or his people's behalf, he is set upon, denounced and is lucky if he is not mobbed. Even our government has sent out the inelegant order to Germans to "keep their mouths shut."

There are thousands of Germans and Americans of German descent whom we have been proud to call our friends, and it is not possible that these erstwhile friends have suddenly become savages and demons.

Let us beware lest we emulate the ignorance of the days of the Dennis Kearny riots when California brought everlasting disgrace upon themselves, even though some of them still profess to be proud of the harrying of defenseless Chinese.

Stand by the Nation now to the last drop of our blood, but, for God's sake, let us not lose our own freedom while ostensibly trying to bring it to other nations.

DEATH OF T. N. BARNSDALL

With the passing of T. N. Barnsdall, at Pittsburgh, Pa., on February 27, one of the best known pioneers of the petroleum industry has been taken away. From the beginning of the oil business, Mr. Barnsdall has been interested in the business, for when Colonel Drake made his famous discovery at Titusville, Pa., in 1h59, William Barnsdall, father of Theodore N. Barnsdall, left his bench in his shoe shop in that town and embarked as an oil producer. He drilled the second well to be completed in the United States and was a member of the first syndicate to construct an oil refinery in the Pennsylvania field.

Theodore, or as he was known to his friends, "Thede" Barnsdall was 8 years old when oil was discovered, and oil was instilled into his life from a very early stage. He studied the situation and condition and at 16 he drilled his first well, near Bradford, this proving a money maker. He then started developing the New York oil fields, where he developed oil in 1882, going from there, later, into Ohio and West Virginia, and then practically into all of the new fields in the United States as they were developed, up to the time of his death.

Among the firms with which he was officially connected were the Barnsdall Oil Company, the Union Natural Gas Corporation, Pittsburgh Oil & Gas Company, Kansas Natural Gas Company, and many others. He had extensive holdings in Oklahoma and California, and the Pittsburgh Oil & Gas Company is now operating on the McKittrick front in this state.

He was associated with Drake and Yancey during the early boom times in California, when they controlled several extensive properties in the Midway, McKittrick and Belridge districts. It became necessary for Mr. Barnsdall to take over all the holdings of the syndicate through trouble between the members, and some of these properties are now held under the name of the Potter Oil Company.

Mr. Barnsdall probably drilled more wells and opened up more new territory than any individual operator in the history of the industry. At the time of his death, which occurred suddenly, following a stroke of paralysis, he was 66 years old. He leaves two daughters, Miss Allene Barnsdall, of Los Angeles, and Mrs. Robert Law of Pittsburgh; one sister, Mrs. C. W. Snakard, of Titusville, Pa., and a half sister, Miss Lucy Cleland, of Providence, R. I.

Depositions are being taken in Chicago for the government's suit to recover $30,000,000 worth of oil land of California, from the Standard and other companies.

The St. Helens Petroleum Company has a new rig up for No. 21 well, on section 16, 32-24, in the Buena Vista Hills.

Rock Colors and their Significance

The colors of the rocks encountered in drilling in the oil fields, and what these colors signify.

Yellow and brownish yellow.—Occasioned by the hydrous oxide of iron. These colors usually occur on the surface of rocks containing carbonate of iron, when they have been exposed for a long time to the action of the air. Or where the strata of a formation has been subjected to surface water having atmospheric oxygen in solution. As the water containing atmospheric oxygen in solution. As the water containing atmospheric oxygen hardly ever reach any great depth these colors are confined to the upper strata.

Brown—Is owing to the concentration of manganiferous oxide of iron deposited from solutions.

Black—Caused by the concentration of manganiferous oxide of iron. It closely resembles asphaltum.

Black—Occasioned by asphaltum which has entered porous rocks, or fissures and cracks in the shales. It can be distinguished from manganiferous oxide of iron as it is soluble in chloroform, turpentine, and bisulphide of carbon. A very minute quantity gives these solvents a brownish tint. Manganiferous iron oxide is insoluble in these solvents.

Bright red—Produced by the presence of anhydrous peroxide of iron. It usually is found where shales or other rocks have been burned with free admission of the oxygen of the air. They are generally found where solfataric has taken place or is in action. When scratched the streak becomes whitish. As bitumen and sulphur are the fuels that burned these rocks they are to a certain extent an indication of the presence of petroleum in lower strata.

White.—Pulverulent soluble silica which has been precipitated in the state of an impalpable white powder. It is called soluble silica from its being soluble in boiling solution of potash. At a dstance deposits of soluble silica look like a snow drift. It is formed from ordinary shales and sandstones by hot alkaline solutions which have ascended and escaped from igneous intrusins.

Blue and greenish blue.—These colors in the shales, clays and sandstones are caused by the presence of carbonate of iron. Natural gas acting on the hydrous oxide of iron, which is yellow, and was originally present in these rocks is converted to the carbonate of iron, which is blue and greenish blue, when not exposed to oxygen. As natural gas is almost universally present below the line of permanent water saturation, rocks colored with carbonate of iron occurs in immense bodies in the oil fields of California. On account of the carbonate of iron being soluble in water it has generally been removed from such sand strata in which there is a movement of a large amount of water. In shales and clays where there is but little or no movement of the water the carbonate of iron remains.

Brown.—Shales are often brown by brown friable bitumen, the residue of petroleum after the evaporation of its volatile parts. To the oil operator these are the most interesting of all the shales for the reason, that they are never found except adjoining porous sands that once or now contain petroleum or adjoining fissures, crevices or cracks approaching verticality, that once contained or now contain petroleum. The brown friable bitumen of these shales is soluble in turpentine, chloroform and bisulphide of carbon. A very small amount of this bitumen giving a brown tint to these solvents, whereas manganiferous iron oxide and hydrous oxide of iron, which are also brown, are insoluble in these solvents. When heated on an iron plate brown bitumen gives og vapors having a bituminous odor, which is not the case with other brown colored rocks.

Black.—The bitumens, such as asphaltum give a black color to sands and also occur in fissures, crevices and cracks. The bitumens are soluble in turpentine, chloroform and bisulphide of carbon. A very small amount of the bitumens will give a brown tint to these solvents which is not the case with the black color occasioned by the presence of manganiferous iron oxide, concentrated carbonaceous matter or the fixed carbon which are insoluble in these solvents. When heated the bitumens give off a bituminous odor.

Gray.—A gray color is imparted to sandstones and shales by comminuted carbonaceous matter disseminated throughout these rocks. It is not soluble in the solvents of the bitumens.

Black.—Is sometimes the result of the long continued application of hydro-thermal action on the bitumens which form fixed carbon. It is insoluble in the solvents of the bitumens. It occurs largely in the bitumo-silicified shales, and the shales and sandstones in which secondary distillation of the bitumens has taken place through hydrothermal action.

A BIG OIL DEAL

An oil deal involving a million and a quarter dollars and several Oaklanders has been completed.

The Associated Oil Company has completed arrangements to take over the holdings of the Casmalia Syndicate which holds a lease on 1800 acres of oil land near Casmalia, in the northwestern part of Santa Barbara county, and the transaction carries a price of $1,250,000. These holdings are just west of the Doheny purchase which was one of the largest oil land deals that has been made for many months.

The Casmalia Syndicate was organized a short time ago by J. F. Carlson of this city, Herbert Fleischhacker, Clarence Berry and a few others, and they secured possession of 1800 acres in this newly developed district. The Associated Oil Company, which is a Southern Pacific Subsidiary, has been looking at this field with jealous eyes and has vnally got possession of these holdings, which have every prospect of being among the most valuable in this field.

The Casmalia Syndicate was a close corporation and the entire control will pass to the Associated company with this deal.

DOHENY TO DRILL NEAR PISMO BEACH

The Doheny Oil Company, upon final delivery of leases recently executed between that corporation and Lawrence Hourihan, as administrator representing the Hourihan interests, have begun operations on an extensive scale within that portion of the Hourihan estate properties adjoining the state highway on the north, between Pismo beach and the town of Arroyo Grande, known and designated as Subdivision No. 12 of El Pismo rancho, containing 764 acres.

COMMON CARRIER PIPE-LINE LEGISLATION

Final hearing and decision in the four-year oil pipeline litigation are now hoped for within the course of the next few months. At the request of Mr. Alfred L. Black, the attorney who has been engaged to represent the interests of those who desire to have the constitutionality of the common carrier law sustained, the supreme court of California has ordered that the case be called as soon as the last brief—that of one of the attorneys of the Associated Oil Company—shall have been filed. From the fact that California law is similar to the Federal statute covering pipe-lines crossing state lines, the constitutionality of which was sustained by the Supreme Court of the United States. Mr. Black is strongly of the opinion that the highest tribunal in the state will uphold the act of the legislature of 1913.

If the highest court does sustain the law, Mr. Black intends to submit to the railroad commission a full schedule of rates and a code of regulations covering every feature of the business of transporting oil by pipe-line, and ask for their adoption. In order that he may be sure that he has not overlooked any possible point, Mr. Black desires any oil man—producer or refiner—who has any suggestions to offer to communicate with him. His office is in the American Bank Building, Los Angeles.

Under the set of regulations which Mr. Black has prepared tentatively, if adopted by the Railroad Commission, the cost of moving oil by pipe-line from the Kern County fields to Los Angeles or San Francisco Bay will not exceed 12 cents per barrel, as compared with the 40 cents now charged for tank car transportation by the railroads. In addition to these charges there will be a charge of 2 cents a barrel for gathering the oil from producers' settling tanks, and a demurrage charge of 1 cent per barrel a month for oil not removed by consignee within thirty days after its receipt at terminal. When the identity of oil to be transported is required to be preserved, the minimum to be accepted will be fixed at 10,000 barrels; when an equal amount of oil of the same grade as that turned over to the pipe-line company will be accepted at terminal, the minimum will be 1,000 barrels. There will be regulations as to the gravity of oil to be accepted, the percentage of foreign matter permissible, the temperature at which it shall be measured, and the allowance to be made for shrinkage.

Meanwhile, application has been made by the Pacific Pipe-Line Company to the State Railroad Commission for authority to issue bonds to the amount of $3,000,000, of which amount $212,000 will be spent for the purchase of oil lands, and the balance for the construction of a common carrier pipe-line from Maricopa to tidewater at Ventura, a distance of seventy miles. The enterprise is backed by eastern money. The main office of the company is in New York. Dr. W. E. W. Hall is president.—Mining and Oil Bulletin.

THE OIL LAND SITUATION

Those oil operators of the west—and their number runs into hundreds—who converted the arid deserts into highly productive oil fields, and who were caught by the withdrawal order of September 27, 1909, and the provisions of the act of ratification and subsequent withdrawals in July, 1910, still find themselves enmeshed in the tangles of the law, with receiverships demanded as to their properties, and actions filed by the government to oust them, and for full damages for the taking of oil produced.

The Sixty-fourth Congress has adjourned without final action in the matter of their relief. It appears, however, that the operators' equities have finally impressed themselves—as the oil men claimed would inevitably be the case—upon the administration and Congress. The whole subject has been threshed over for the last 12 months, and after elaborate hearings before various committees, the so-called Phelan amendments received the stamp of approval of the Senate committee on public lands. At the short session of Congress the matter was again exhaustively heard by the committee on naval affairs.

In the meantime the filing of suits continues. Over 30 new actions have been begun against operators. The Department of Justice apparently still feels the pressure of duty calling upon it to enforce the letter of the law. On the other hand, the good faith of the defendants in the development of their lands and the expenditure of vast sums of money in connection therewith, will probably be unquestioned in practically all of the cases. In the hearings before the committee on naval affairs the sentiment of some Senators seemed to be that operators in the withdrawn area would have to be content with a relief measure, which would allow them leases for their lands, where these fall without the naval reserves, on a basis of a one-eighth royalty and for leases of wells which they have drilled, where these lay within the naval reserves, on similar royalty.

The principal naval reserve in controversy was created in December 1912. It is not suggested that any of the oil men seeking relief had not fully developed their claims at that time. To discriminate in the matter of relief against claimants whose lands are within the naval reserve would seem to punish those operators because, unlike their more fortunate neighbors, their locations happen to fall within lines drawn by the government long after the work of development was finished.

While the oil men cannot congratulate themselves on any concrete result so far obtained from Congress, it may be safely stated that they appear to have taken a step forward, in that they have convinced practically all who have examined into their case that their violation of the law was unintentional, their trespass innocent, and the government practically bound in morals and good conscience to relieve them of their plight. "Standard Oil Bulletin".

GOVERNMENT PIPE LINE REPORT

To give a comprehensive monthly service on the movement of crude oil the United States Geological Survey has begun the collection of data from all the public and private pipe line companies operating east of California. The first report covering January runs and shipments is compiled from reports of 30 companies in the Appalachian field, 30 companies in Oklahoma and Kansas, nine in the Lima fields, six in Illinois, eight in central and north Texas and eight in the Rocky mountain states. The figures compiled show a total movement of 12,492,496 in January, 1917 and 10,637,575 barrels in December.

Crude petroleum delivered to refineries or consumers in barrels of 42 gallons each were 9,703,774 during January, 1917 and 4,136,077 during December, 1916.

The comment of the government statistican is as follows: "In the fields for which it is possible to prepare at this time representative and comparative statements it is apparent that oil production, as indicated by the movement from field sources, was greater in January than in December, or in January a year ago.. Con-

sumption, as indicated by the table of deliveries recorded a corresponding increase, as compared with December, and with the exception of the Lima-Indiana area, as compared with January, 1916."

THE BOOM IN SHIPBUILDING

It was not so long ago that we heard the story of a certain shipowner who had an old vessel which he valued at about $12,000, auction price. In other words he figured it should bring that much as junk for the old metal, fittings and other materials it contained. He actually made a bargain with a salvaging company for $12,000 cash. The old hull was immediately resold for $400,000, and the big junk dealers thought they had surely made a killing. But the man who bought it for $400,000 was a ship broker, who knew a thing or two, and he proceeded to resell the boat to an exporting and navigating company for $1,200,000, and felt mighty well pleased with himself over the clever deal he had made. Then to cap the climax, the people who paid the seeming exorbitant price of $1,200,000 for the ship cleared more than their purchase price from the very first voyage of the ship.

The conditions which make such transactions possible are of course directly due to the war, say Harvey A. Willis & Co., New York, in their "Weekly Market Letter." From the beginning of the war to date the losses of merchant tonnage of the Allies and of neutrals, exclusive of the United States, have amounted in round figures to 6,000,000 tons, or more than 15 per cent of the registered tonnage of the countries affected. With the urgent necessity of having this tonnage replaced, and with the great yards of England, Germany and France closed to any building except for their own account, it is only natural that much of this business of rebuilding should be placed in American yards. It is said that over half the tonnage now under construction in the United States is for foreign account. The utmost capacity of all the shipbuilding plants in thec ountry cannot begin to meet the demands placed upon them by government and private interests all over the world. Capital is bidding against capital in order to get control of ships. Price is no object. The commerce of the world must go on. If ships go to the bottom of the sea, they must be replaced with new ships. There is no other way.

Now comes the likelihood of the United States entering the war. The scarcity of steel has already made itself felt and ships of wood have been building, especially in the Pacific Northwest, for some time. Incidentally the builders frequently sel the boats almost before they are launched for several times as much as it cost to build them. Seattle is the center of activity, some $80,000,000 worth of steel and wooden ships being in the course of construction at this time. The Federal Shipping Board has $50,000,000 to spend for ships and in view of crowded condition in steel shipbuilding it expects to call on the Pacific Coast builders for wooden ships of varous sizes up to 300 feet long.

It s small wonder that under such conditions there has been recently a marked expansion of American capital going into shipbuilding and operating concerns, and it is probably evidence of a notable addition to the United States merchant marine. As matters now stand it would seem that capital so invested will be unusually well protected, for if peace comes soon the world's commerce will be greater than now and not enough ships to move it, while so long as the war continues the more ships will be sunk and the more urgently they will be needed and at presumably still higher freight rates. The boom in shipbuilding is already under way.

OIL ASSESSMENT REDUCED

There is a material reduction, as compared with last year, in the amount of money to be collected from oil operators for the support of the oill department of the State Mining Bureau in its work of protecting the oil fields against damage by infiltrating water. The total is less than one-third of the previous figures.

The State Board of Control and the State Mineralogist have, as provided by law, made an estimate that $45,000 is necessary for the coming fiscal year. The assessment levied last year, amounting to $150,000, was due to the extraordinary expense of establishing the new department. The rate of assessment last year was one and one-half mills per barrel of oil and eighteen and three-quarters cents per acre of actually proven oil land.

There is about $250,000,000 invested in the California oil business, and during the past fiscal year about $6,000,000 was expended in drilling new wells, and therefore it is unnecessary to do more than merely call publics attention to the insignificantly small amount of money for the protection of the investment.

REPORT OF MINING BUREAU ON OIL

The First Annual Report, covering the work of the State Mining Bureau in protecting California oil fields from infiltrating water, has just been published, together with general descriptions of various phases of the work and the policy under which the law has been administered. There is a financial statement covering the $20,000 spent during the past fiscal year, and comment on the economy of such expenditure for work insuring the total of $250,000,000, which is already invested in California oil operations. Recent developments in various fields are covered in detail, and maps show the exact location of the 80,702 acres of proven oil lands in the state.

A side feature, which should be of general usefulness, is a complete directory of all incorporated oil companies, giving names of officers, capitalization, number of wells and location, besides showing whether or not the company produces oil.

Upon the facts presented in the report of its work and experience, the State Mining Bureau has framed the amendments to the present law, and anticipates no difficulty in proving the necessity for the changes.

The report will be distributed to the oil operators by the State Mining Bureau from its offices at the Ferry Building, San Francisco, and 520 Union League Building, Los Angeles.

VLADIVOSTOK DECLARED OPEN PORT

News of great interest to every steamship and shipping firm on the Pacific Coast is contained in a cablegram received to the effect that Vladivostok has been declared an open port by the Russian government. This is interpreted to mean that the embargo on commercial cargo to Vladivostok has been raised. For the past few months it has been necessary for firms shipping anything but war material to Vladivostok to obtain special permission from the Russian attache at New York.

California Derrick

The Oil Authority of the Pacific Coast

PUBLISHED MONTHLY
—BY—
The California Derrick Publishing Company
DR. CLARENCE E. EDWORDS .....Editor
E. L. MACKEY ..... Business Manager

OFFICES
509 Sansome Street, San Francisco, California
Telephone Sutter 2984
Editorial Rooms 417 Montgomery St., Room 422
Telephone Douglas 3617

Subscription price, per year, $2.00 Foreign $2.25
Advertising Rates on Application
Entered as second-class matter February 17, 1912, at the postoffice at San Francisco, Cal., under the Act of March 3, 1879.

THE DERRICK'S CREED

The California Derrick has no axe to grind, no company to promote, no stocks to sell, no "interests" to bow to. Not dominated by any company, but faithful to California's Oil Industry.

OIL TRADE OUTLOOK

Leading authorities in the oil industry say there is no decrease in the demand for crude and predict continued activity for some time. Moreover, they make it plain that it would not surprise them if prices reached a still higher level. Materials are scarce in some oil fields, so that operators are retarded in their drilling. For this reason old wells are made to produce all that is possible.

TESTING IN TULARE DISTRICT

Hale & McLeod, who formerly operated extensively in the Midway District, have taken a lease on several hundred acres of land in the Richgrove section, south of Porterville, and have announced they will begin drilling test wells for oil on the property in the near future.

Three years ago a Pennsylvania prospector put down a test hole to a distance of 1500 feet on this section, and found encouraging formation and about ten feet of oil sand. Various mishaps swallowed up his funds and he was compelled to abandon the work.

OIL SUPPLANTING COAL

Oil is fast supplanting coal as fuel in manufacturing establishments in many sections of the country because of its greater economy. The high price of coal and the failing of natural gas supply has increased demand for fuel oil to the largest extent ever known, and as a result the price of fuel oil has doubled in the last several weeks. The present price of 8 cents a gallon at Pennsylvania refineries compares with less than 4 cents about two months ago.

The rapid development of the use of fuel oil in manufacturing plants is the feature of the oil industry at present, outside of gasoline. At present prices fuel oil is becoming more valuable to the refiner than kerosene, once the backbone of the oil refining business. Kerosene today is selling for 1 1-2 and 2 cents a gallon in Oklahoma, and it is a glut on the market.

The use of oil as fuel in ships has been pretty well established as superior to coal. Roughly, three barrels of oil will do the work of one ton of coal, so the choice of either is largely a matter of price. In addition there are small economies of operation when oil is used, such as a day saved in port, larger cargo space and elimination of stoking charges.

Much progress is being made by railroad companies with oil-burning engines. With some of the larger systems which have an oil supply of their own, notably the Southern Pacific, satisfactory results are being obtained. A ton of coal and a ton of fuel oil cost the Southern Pacific practically the same, but it gets almost three miles more out of a ton of fuel oil than out of a ton of coal. A ton of fuel oil costs the Union Pacific about one-third more than a ton of coal, but the road gets almost double the mileage out of oil.

NEW OIL CONCERNS FORMED

Records compiled by the "New York Journal of Commerce" show that 563 new oil and gas companies have been formed since the beginning of the war with an authorized capital stock of $666,000,000. The figures by month demonstrate that the boom in the oil field developments has not yet culminated and that as yet there is no sign of a decrease. In January and February of this year 80 corporations were formed with a stock valuation of $127,000,000. In the month of February alone there were 53 concerns with $82,000,000 capital stock. The creation of companies in the last several months reflects the inducement which is held out by enormous profits in oil production and the prospect that the demand for gasoline will continue indefinitely. More than one and a half million new automobiles were sold last year, and that record seems likely to be surpassed in 1917. With this greatly increased number of motors consuming gasoline, promoters feel that they are safe in making large expenditures in discovering new sources of supply.

PERSECUTION OR PROSECUTION

The quick dismissal of the case against Captain Thorwald Brown, of the Oakland Police force, by Commissioner Jackson, coupled with the statement of the commissioner and the complete exoneration of Captain Brown by witnesses who had been before the Grand Jury, is no more than was expected by those who know Captain Brown. His record for honesty and integrity is above even suspicion, and when a man of this character is attacked for political purposes by those who are sworn officers of the law, and who use their positions for private ends, it means that the office of prosecuting attorney develops into that of "persecuting" attorney.

Captain Brown, who has been president of the Cooperative Oil Land Development Company from its inception, was accused of using his position as captain of the police to further his private ends by forcing the purchase of stock in the company on improper persons. Notwithstanding the fact that not a single bit of evidence of wrong doing was produced before the Grand Jury, as shown by the transcript of the evidence, that body recommended the dismissal of Captain Brown.

Fortunately for Oakland and for her people, Commissioner Jackson was not a man to be intimidated by such pressure as was brought to bear on him and he ordered the immediate dismissal of the charges against Captain

Brown and his complete and full exoneration from wrongdoing.

The action of Chief of Police Peterson and of Prosecuting Attorney Hynes bears the taints of personal malice, which, to say the least, is unbecoming in officials holding their power. Unless the law is carried out without persecuting personal enemies of officials it becomes a travesty, and in the present instance there is every evidence that revenge had more to do with the persecution of Captain Brown than an effort to cleanse Oakland of malfeasance in office.

DEVELOPING IN SAN LUIS OBISPO COUNTY

Work has begun in the new oil field on the Carissa Plains, where the Carissa Syndicate, of which J. F. Carlston, president of the Central National Bank of Oakland, and Clarence J. Berry, president of the Berry & Keller Oil Company, are the leading spirits, are preparing to sing test wells on the lands recently leased from various owners in that region. Material for the first rig has been forwarded to Simmler, close to which place the first well is to be drilled. Other shipments of material are to follow as rapidly as possible, the intention of the Syndicate being to make a thorough test of the territory, which is regarded with much favor.

A few miles west of the operations of the Carissa Syndicate another syndicate headed by Dr. Clarence E. Edwords of San Francisco, is cleaning out and preparing to deepen the old Cedar Spring well, on the San Juan ranch. This well was drilled to a depth of 1965 feet and then cemented with a plug of thirty sacks of cement, some five years ago. On opening the well it was found that the cement plug had been shot up 1000 feet and was solid at the 965 foot level. Below the plug the drillers found the well filled up with asphalt and mud which had hardened. The well has been cleaned out to the 1936 foot depth and drilling is actively going on. Indications are for a gusher well, according to the opinion of geologists.

Six miles west of the Cedar Spring well a new well is going down as soon as the derrick, which is under construction, can be completed. This well is on the domal formation lying west of the San Juan river, and some remarkable paleontological finds have been made, among them being the thigh bone of a mastodon. This is now on exhibition at the offices of the Co-operative Oil Land Subdivision Company in the Humboldt Bank building in San Francisco.

The Co-operative Company will begin drilling as soon as it can secure the necessary casing, as its derrick is ready for operation.

About ten miles west of the town of Shandon, which lies to the west of the Co-operative property, the Standard Oil Company has bought 10,000 acres, and leased and optioned 10,000 acres more, and will begin work early this Summer.

Oil men who have studied the situation are convinced that the Carissa Plain district and the territory west of there for several miles, will develop into one of California's greatest oil fields.

In drilling the Cedar Spring well the log shows that from 1,400 to 1,695 feet there was encountered oil bearing strata which gave indications of a good flow of high grade oil. For some reason the well was not brought in at that depth. The new wells that are going down expect to get the oil at about 1,500 feet and will bring in the wells there and leave deeper testing for the future.

The Peerless Motor Car Company recently sent the following letter to all Peerless dealers.

To All Dealers:

For your information we wish to advise that in our experiments and tests here at the factory with our new Eight Cylinder car, we have been able to secure uniformly better results with Standard Oil Company's Zerolene motor lubricant than with any other which we have used.

Please understand, however, that we do not wish this to be construed as an attempt on our part to dictate the brand of oil which you should use, but merely to call your attention to the fact that this particular brand has given us better results than any other which we have tried, and are giving you this for your information.

Very truly yours,

THE PEERLESS MOTOR CAR CO.

Because Zerolene is correctly refined from asphalt-base crude it maintains its lubricating body and value at cylinder heat, thus forming a perfect piston seal, reducing friction, and enabling the motor to develop its maximum power.

Zerolene is the oil for YOUR car.

For sale by dealers everywhere and at our Service Stations.

Standard Oil Company
(California)

News from the Oil Fields

McKittrick District

Oil has been struck in well No. 2 of the Standard Co. situated on the summit of the foothills immediately northeast of McKittrick, in section 18, 30-22, and in consequence there is much elation among the residents of McKittrick and vicinity, and satisfaction expressed on the part of people interested in the local petroleum industry, as the discovery has proven this portion of the field. Section 16, 30-22 passed into the possession of the Standard Oil Co. last summer, the property having been acquired from A. B. Spreckels, of San Francisco, and the drilling of wells Nos. 1 and 2 started in the early days of February.

The Associated Oil Co., whose activity in the Lost Hills district during the past year or two has contributed largely to the productiveness of this region, is preparing to drill a new well in section 29, 26-21, where the company has a number of wells. It holds in the Lost Hills-Belridge district a large acreage and much new work is being done by the company in the Coalinga field, where three wells are to be sunk, drilling to commence this month. The Associated is now redrilling No. 32 in the McKittrick district.

Continuing its development in the Midway field, the Santa Fe is beginning the drilling of seven new wells on the lease of the Chanslor-Canfield Midway Oil Co. These are to be sunk in section 26, 31-22, on which there are a number of producers. The Santa Fe has led all other companies in the Midway this year in development, the Standard and the Kern River Trading and Oil being the strongest competitors for this distinction.

The Marina Oil Co., which in recent month has done much development on its property in the Belridge district, drilling several new wells, is to add four to the list, these to be located in section 3, 29-21. The company began its operations in this field in December last by sinking three holes, and in January spudded in three more.

The California Star Oil Co., has started a new well in section 24, 26-20, in the Lost Hills district, and it is rumored that other holes are to be drilled before long.

The H. S. Williams Oil Co., which has a number of wells on its lease on the North McKittrick front, is redrilling No. 17, in section 26, 29-21. The Williams property is quite close to that of the Pacific Crude Oil Co., and on each are some good producers of rather heavy gravity.

The Doheny Pacific Petroleum Co. has abandoned well No. 3, located in section 3, 31-22, and the Belridge Oil Co., has abandoned No. 35, in section 35, 27-20. The former is in the North Midway field and the latter in the Belridge district.

An assessment of ten cents per share of the subscribed capital stock of the Tannehill Oil Co. has been levied by the board of directors.

A. D. King has sold to the Union Oil Co. the northeast quarter of section 30, and the south half of the southeast quarter of section 19, 28-21.

Ellis R. Miles has purchased from the Amaurot Oil Co. the east half of the southwest quarter of section 24, 26-19.

Coalinga District

The Shell Company of California, on section 14, 19-15, has erected ten standard combination rigs, and there are five more to be built to complete the allotment for this section. Two rotary crews are now drilling, also two cable tool crews following up the rotary and completing the wells. These wells are to be drilled on the east half of the section, and are all inside wells. There are no offsetting wells in this allotment.

The Parkfield district, Monterey county, adjoining Fresno county on the west is showing renewed activity. A number of oil men have been busy securing leases, and two rotary drilling contractors have been over some of the ground with a view of putting in bids on wells to be drilled. The scarcity of material is having its influence in holding back development work in this section of the field. Two of the large marketing concerns have had scouts through the Parkfield district for some time. A report is current that as soon as drilling material can be secured that at least two wells will be started.

Belridge District

New development in the Belridge oil field includes preparations for the drilling of six wells, equally distributed between the Marina Oil Co. and the General Petroleum Corporations, the Marina to sink the holes in section 3, 29-21. The general Petroleum in section 3, 29-21, and section 2, 29-21. The General Petroleum operates many wells in the district, and the Marina has made strong strides in the direction of building up the fields, the activity of both giving indications of making a decided record during the year in the matter of exploration and production.

Maricopa District

With more strings of tools running now than at any other time since taking over the several properties in the Sunset field, the Standard Oil Co. is pushing through the development of the properties it recently acquired and has started on a program that will complete the drilling up of many acres of oil lands under its control on sections 36, 12-24 and 1, 11-24. The work is directly in charge of Superintendent Len Little of the Standard Oil Co., located at Taft, and when the program outlined is completed every location on the M. J. & M. and M. and old Wellman properties as well as on the Monte Cristo lease, which is now known as the Maricopa lease, will have a well upon it.

Kern River District

The United Western Consolidated Oil Co., on section 26, 29-21, M. & T. Oil Co., on section 36, 12-24, and Pyramid, on section 26, 31-22, have contracted their oil to the Standard.

Estate of Carrie E. B. Tripp has been distributed to Katherin Tripp and Mary J. Butler. It comprises the north half of north half of section 24, 28-20.

Thete Land & Oil Co. has given notice of desire to cancel lease to E. R. Dudley and B. B. Dudley to lands in section 3, 26-20, Lost Hills, on ground that well has not been operated by reason of superfluous water.

Andre Lazard has deeded to the Security Oil Co. the east half of the northeast quarter of southeast quarter and northwest quarter of northeast quarter of southeast quarter of section 24, 25-20.

Samuel R. Smith has sold to Charles D. Brittain lots 1 and 2 of southwest and southeast quarters of section 18, 25-20, near Lost Hills for $16,000.

Taft District

The No. 50 well of the Mascot Oil Company, on section 26, 32-23, on Twenty-five hill, was put on the beam and is making a showing of better than 300 barrels daily. It is one of the best wells in the property for some time. The No. 49, which was put on the beam ten days ago, is keeping steadily around 250 barrels a day with but little fluctuation.

The No. 51 well on the lease is now down 700 feet. The oil is looked for at about 1200 feet.

The No. 20 well of the Hale-McLeod Oil Company, on section 25, 31-22, is being drilled into the sand with 900 feet. It is being drilled with cable tools.

The No. 8 well of the Visalia Midway Oil Company, on section 25, 31-22, is being drilled into the said with cable tools. The No. 9 is now drilling with a rotary at a depth of about 500 feet. Both wells are being put down under contract by the California Well Drilling Company.

The No. 5 well of the Victor Oil Company, on section 35, 32-23, is down 700 feet. It is being drilled with cable tools.

Superintendent L. P. Guiberson, of the Indian and Colonial Development Company, operating on section 23, 32-23, is putting forth a decided effort to make the old No. 11 well a producer.

George York, formerly field head of the Section Two Syndicate Oil Company, operating on section 2, 32-23, but now in charge of operations for the Carissa Syndicate in its plans to drill a wildcat well near the Cavanagh ranch, spent Tuesday in Taft on business. He has contracted with the Cavanagh ranch to rebuild the roads at a number of points over the Templor grade, after which the trucks from the ranch will be in charge of transporting the heavy well materials to the location made for drilling.

Drilling has been resumed on the No. 35 well of the Midway Gas Company on the Kern Trading and Oil Company section 7, 32-24 property in the Buena Vista Hills. The well stood cemented for several days. It has been tested out and the water found shut off.

Santa Maria District

Evidence of the substantial progress being made in the Santa Maria oil fields is shown by the activities of some of the strongest companies, among them the Doheny Pacific Petroleum Co., the Pinal Dome Oil Co., and the Pan-American Petroleum Investment Co., the two former corporations being controlled by the Doheny interests. Work was started last week in drilling three new wells by the Pan-American Petroleum Investment in the L. A. Ranch, in the Cat Canyon district, and on one new well by the Pinal Dome Oil Co., in the Casmalia field, and drillers are busy with two wells spudded in a few days ago on the lease in the Casmalia field. The Doheny Pacific Petroleum Co., within the past three wecks has established a record for the Santa Maria district by beginning work on nine new holes in section 22, 9-35, and section 24, 9-35, the properties lying in the Casmalia field, and one well at Cat Canyon. The Casmalia Syndicate, also operating in the Casmalia district, is putting down two new wells. The Pinal Dome Oil Co. has spudded in a well at Casmalia, has finished several others within the recent past, and is planning to sink other holes when the casing situation has improved, permitting the prompt receipt of material.

The California Star Oil Co. has started a new well in section 24, 28-10, in the Lost Hills field, and another in section 26, 31-22, in the Midway district: Manley and McGinn, who are operating in the Midway field, are drilling a new hole in section 14, 31-22, and the Victor Oil Co., in the same district are adding a new well to their list.

In the North McKittrick field the Standard Oil Co. has ust cemented well No. 1, in section 16, 30-22, in which oil was struck a few days ago.

CALIFORNIA CONCENTRATES

Commerce Oil Corporation, of Phoenix, Arizona, has incorporated with a capital of $25,000. The incorporators are Guy E. Shields, Pardon C. Rickey, S. R. Trover, all of Kansas City, Mo.

The Guard Oil Company, of Phoenix, Arizona, has incorporated with capital of $25,000. The incorporators are Gustave Becker, C. S. Pettit and W. M. Wilson.

Oil operations have started in the McFarland territory near Bakersfield. The Hillcrest Oil Company has its workmen in the field to drill a test well.

The McReen Oil Company has incorporated at Phoenix, for $1,000,000. The incorporators are Ralph R. Cain, M. McCain and G. F. Green.

The Marina Oil Company is preparing to drill six wells in the Belridge field.

J. R. Davis, millionairc oil operator of Chicago, has purchased an entire section in Township 44, East San Bernardino county. He has incorporated the Eureka Oil and Gas Co.; $1,000.000. He will proceed immediately with development work.

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ASSOCIATED RENEWS WORK AT MARTINEZ

The Associated Oil Co. recently commenced actual refining operations at the plant of the American Oriental Company, which it has taken under lease for a long period. The stills, agitators and canning department will be operated, kerosene being the principal item of production.

Chief Engineer A. F. L. Bell of the Associated company is expected next week to supervise the starting of refining operations.

UNION OIL AUTHORIZED TO SELL STOCK

Commissioner of Corporations H. L. Carnahan has authorized the Union Oil Company to sell shares of its unissued capital stock equal in amount to 10 per cent of its present outstanding capital stock. This is equivalent to an issue of approximately $3,500,000.

The permit provides that the shares shall be offered to the stockholders of the Union Oil Co. of California and of the United Petroleum Co., pro rata, at par, $100 per share. The proceeds are to be used for the purpose of completing a new refinery in Southern California, purchasing additional oil lands and extending selling facilities.

Under the proposed plan, the purchasers are given until May 1 to exercise their option calling for the payment of 10 per cent on account of the purchase price. Further payments are to be made in stallments through the year, the last payment of 15 per cent on or before December 31, 1917.

The company is expected to declare its regular quarterly dividend of $1.50 per share in April, so that every present shareholder will receive more than sufficient in dividends to cover his first payment on his apportionment of the new stock. The regular dividend for the year will amount to 6 per cent and a special dividend of 1 1-2 per cent is anticipated so that shareholders participating in the new issue will have to pay but $25 per share for their proportion of the new issue in addition to dividends received during the present year on their present holdings.

Further assurance that all of the stockholders of the company will be able to take advantage of the opportunity to participate in the increased issue has been given to the Commissioner in the statement that Los Angeles banks will loan the full par value or more on Union Oil stock put up as collateral security. From the statements of the company, it appears that dividends will be sufficient to more than meet the interest charges on such loans.

The original application of the company was for authority to issue $5,000,000 par value of its shares. A protest was entered by the Stockholders' Protective Association and a hearing held by Commissioner Carnahan.

In a letter to the company, written prior to the annual meeting, Commissioner Carnahan stated his conclusions indicating that he would authorize the $5,000,000 issue. In this letter he expressed his views as to the manner in which the issue should be made so that each stockholder might reasonably be able to avail himself of the opportunity to participate because it was proposed to offer the stock at less than its market value. He has further indicated to the company that he would authorize the issue up to $8,000,000 of stock on a similar basis.

In stating his conclusions, Commissioner Carnahan held, in his opinion:

"That it would be to the advantage of the company to make improvements and purchases contemplated.

"That these improvements and purchases could all be made as proposed out of the company's present assets and earnings without interfering with the company's dividends or impairing its credit.

"That on this account there was no present pressing necessity for the sale of shares, but, nevertheless, it could not be said that the possession of additional money proposed to be raised might not be advantageous to the company, and in such a case the judgment of the board of directors should control.

"Therefore, the company should be authorized to sell shares if it could be done in such a way as not to be unfair to the public or to its stockholders.

"A substantial proportion of the smaller stockholders might be prevented from buying stock if the selling prices should be greater than the amount they could borrow on the shares.

"That banks generally (at the time of the hearing) would loan $80 per share on the stock, and possibly more.

"That the book value of the stock is approximately $145 per share, and its intrinsic value more.

"That the company should provide for a distribution of a part of its accumulated surplus profits by a scrip dividend applicable to the purchase of shares equal in amount per share to the difference between the selling price of the new stock and the amount that could be borrowed on it."

The company amended its application.

PROFESSIONAL DIRECTORY

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UNION OIL REPORT

Why the stock of the Union Oil Company should have shown such weakness in the market in the face of one of the best quarterly reports ever issued by the company is one of those puzzling problems which baffles conejcture. For the quarter ended March 31, 1917, the company reports net profits, after general expenses, taxes, interest charges, and employees' participation, of approximately $2,720,000, or an increase of $1,020,000 over the March quarter in 1916—which, it will be recalled, was by no means a bad quarter. The net profit for the March quarter of 1917, after a remarkably heavy allowance for depreciation, amounted to $2,050,000, or an increase of 80 per cent over the 1916 figures. The profits before depreciation were equivalent to 30 per cent on the eapital stock. If this is not good enough for any investor, the question obtrudes itself: What return on capital would be satisfactory?

The production of the Union Oil Company and its subsidiaries for the quarter amounted to 1,570,000 barrels of oil or an increase of 152,000 barrels. During the final week of the March quarter three new wells were brought in, which added 3,500 barrels of light oil daily to the production. The sales of the quarter amounted to $7,760,000, or an increase of $1,876,000, while the value of the refined and lubricating oils was about 50 per cent greater than in the March quarter of 1916. Capital expenditures, chiefiy for drilling, aggregated $500,000. The company's current assets now stand at $16,500,000, a gain of $1,300,000 since December 31, 1916. Its current assets are over seven to one, as compared with current liabilities.

The company has now in storage about 10,800,000 barrels of oil. From every standpoint this must be admitted to be a most satisfactory report.—*S. F. Examiner.*

MEXICAN PETROLEUM CO .

Mexican Petroleum Company has produced about 70,000,000 barrels of oil since it has been in business, making it the largest producer of oil in Mexico. Close to 7,500,000 barrels of this total have been produced since February, 1916.

It is figured that Mexican Petroleum has produced more than half of the total output of Mexico since records have been kept of the production of that country. Mexico's total production is placed at about 125,000,000 barrels since 1904.

Little was done in the way of production until 1911, when the yearly output jumped to more than 14,000,000 barrels from 3,000,000 barrels as a result of the bringing in the Mexican Petroleum Company's big Casiano well. This well alone has produced more than 50,000,000 barrels.

Up to December 21, 1911, the total production of Mexican Petroleum Company's Ebano group of properties was placed at 10,653,822, and of the Casiano wells 10,706,981.

OIL STRUCK AT CEDAR SPRING WELL

Drilling at the Cedar Spring well, on the San Juan ranch in San Luis Obispo county, has been temporarily stopped owing to a rush of mud covering the tools at the bottom of the well to a depth of more than 300 feet. The drilling has been going on for several days, cleaning out the old deposits and about the first of April solid Monterey shale was found and drilled through to a black shale. On penetrating this black shale a few feet something broke loose in the bottom of the well and the drill was caught and held while mud oozed up around it.

Dr. Clarence E. Edwords, who heads the syndicate that is developing the well, returned from the well on April 8and reported that oil could be seen bubbling through the mud and when the bailer came up it brought sufficient oil to show good colors over all of the mud and water poured out.

It will take several days to get the well cleaned out and preparations have been made to guard against a gusher, which seems to be one of the possibilities of the property. The well is down 1937 feet. Much interest is taken in this well for if the oil proves to be of commercial quantity it will mean the opening of a big district. A number of wells are being started in the neighborhood, and as soon as casing can be secured the Co-operative Land Company, which adjoins the San Juan property, will start down with its development well.

STANDARD TO ENLARGE ITS RICHMOND PLANT

Purchase by the Standard Oil Co. of 100 acres of lowland between its present refinery site and the main line of the Santa Fe has been followed by a statement that the entire area of new acreage is to be covered by additional refinery facilities, helping to bring the plant up to the 5000-man size. It now employs 2800 men, and is working night and day. That the corporation intends to make immediate use of the 100 acres purchased is indicated by the fact that it has already let a contract to a dredging company to fill the acreage two feet. Extensive work is being pushed forward at the refinery in other lines. Miles of pipe are being laid. It is said that one recent order for a certain sized pipe depleted the San Francisco market. Another 36 inch main is being laid for increasing the salt water system used in cooling stills. Filling of land is also going on at the east side of the company's plant. It is said the corporation intends to build its own steamers here.

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OPENING OLD OIL FIELDS AGAIN

High prices for oil and better facilities for shutting off water which have come into use through experience, has brought about quite a deal of interest in old and abandoned fields in California, and there is no going on a search for wells that give prospect of development.

One of the recent developments of this sort came when Dr. A. E. Meltin, of Pasadena, leased 160 acres of the Melissen and Brashear properties in the Salt Lake field, just west of Los Angeles. These properties constitute an extension of the old producing field, and lie between and adjoining the Salt Lake lease of the Amalgamated Company on the north and the tracks of the Pacific Electric Sawtelle, Santa Monica line on the south.

The old abandoned field in the San Bernardino desert is also attracting attention, and stockholders of the Kramer Consolidated Oil Company who recently visited that company's wildcat well in that district say there is considerable oil showing on the surface of the salt water now being pumped, and the ground and derrick are coated with oil. Though they have been trying for twenty years to get oil in commercial quantities, and have lost three wells through accidents and have paid many assessments, these stockholders have faith enough to still hang on. Notwithstanding the assertions of United States geologists that the land is not commercially oil bearing, they insist that they have a paraffine base oil.

INITIAL PRODUCT OF NEW OIL WELLS

Initial product of the 24,000 new oil wells completed in 1916, was less than that of the 14,000 new wells drilled in 1915. Experts say that the domestic supply of petroleum will last only 27 years and that from 25 to 50 per cent of the oil in present known fields has been taken out. While supply is decreasing, demand is increasing. The Navy used 824,000 barrels in 1916 and will need almost twice as much this year. Secretary Daniels predicts that 6,700,000 barrels will be consumed six years hence. A state of war would probably multiply that estimate by three. Automobiles in use number 3,250,000 and annual addition is about 25 per cent. These conditions, according to Mr. Williams, consulting petroleum technologist of the Bureau of Mines, show that the country is surely facing a shortage of gasoline.

PIERCE OIL CORPORATION

The Pierce Oil Corporation will in the near future be able to operate in the state of Texas, through the passage of a law lifting restrictions on corporations, which was signed by Governor Ferguson recently.

The Pierce Co. will thus be able to absorb the Pierce Fordyce Oil Association, a very valuable and profitable organization now doing business in Texas.

As a result of the changed attitude of the Texas authorities, H. Clay Pierce announced in Fort Worth, Texas, at a recent date that the company would spend more than $1,000,000 out of funds in hand to enlarge its refining, transporting and marketing facilities in Texas.

The Southern Oil & Development Company, of Carson City, Nev., has incorporated for $1,000,000, with F. L. Wilson, J. W. Wallace and J. W. Wallace, Jr., as incorporators.

EQUIPPED WITH OIL BURNERS

The American Line has taken advantage of the enforced lying up of the liner "Kroonland" to equip her with burners so that oil would be used in future instead of coal. Work will be finished in about two weeks, and then the "Finland", sister ship of the "Kroonland", will be transformed in the same manner, and both vessels put temporarily on the freight trade between New York and London. The equipment had been on the American Line pier for over a year waiting for an opportunity to install it. The oil will be carried in the double bottom and thus the cargo-carrying capacity will be increased.

CUSHING CRUDE OIL IN STORAGE

Cushing crude oil in steel storage aggregates 38,092,000 barrels, according to a recent tabulation covering thirty companies. Standard Oil interests own a large percentage of this supply, the Carter Oil Company with 359 tanks being credited with 17,000,000 barrels, and Prairie Oil & Gas Co. with 178 tanks being credited with 8,500,000 barrels. Next in importance, so far as storage supply is concerned is the Texas Co., with 4,360,000 barrels. The only other company holding more than 1,000,000 barrels is Sinclair Oil & Gas.

A NEW FIELD AT CLOVIS

A company of promoters has leased 1400 acres of land east of Clovis and will begin drilling within three months. G. F. Griffin who owns the property, says that experts who have examined the land are confident that oil of high gravity will be found at an early depth.

Arrangements have been completed for the boring of an oil well on the east side of the Sacramento river a few miles from Redding.

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The wealth of statistical information contained in this booklet makes it the first of its kind ever published.

It should be of incalculable value to those interested in oil securities.

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Vol. X SAN FRANCISCO, MAY, 1917 No. 9

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Vol. X SAN FRANCISCO, MAY, 1917 No. 9

Let Us Reason Together

Into the affairs of our country has come a crisis which we should meet with sane reasoning and calmness.

This is no time for either hysteria or demagogueism.

This is no time for individuals to think they can take the law in their own hands and mete out punishment to men who do not happen to agree with them in all of the hysterical fads that will be promulgated by notoriety seekers.

The individual who inflicts punishment to another because of some difference of opinion, or because of some utterance that does not meet with the approbation of the hysterical mob, is a law breaker and puts himself or herself outside the pale of the law.

In the United States it is estimated that out of the 110,000,000 inhabitants there are nearly 30,000,000 of Teuton descent. These people have lived with us, have grown up with us, have voted with us, have fought with us in our wars . Either they or their forefathers long ago foreswore their allegiance to Germany and they have been good citizens of the United States—better, perhaps, than many of those who try to gain cheap notoriety by insulting them.

It is not within the bounds of reason that these thirty million people have at once turned away from the ideas and ideals that have been burned into their very souls through years and generations of peace and happiness under our form of government.

Notwithstanding what ought to appear to be a plain proposition it has come to pass, even here in San Francisco, that men and women with German names or even with features bearing the characteristics of the Teuton have been subjected to insult, attack and revilement.

Women who would feel deeply insulted if they were accused of being anything but ladies, have committed open assaults on inoffending people of German descent in public conveyances, and took to themselves great credit for their "patriotic", (God save the mark!) if unladylike actions.

Men, with the appearance of gentlemen but with the manners and thoughts of hoodlums, have entered stores owned by men of German descent and verbally assaulted the proprietors, without other provocation than the fact that the store bore a German name over its doors.

The laws of the United States are sufficient to cover all offenses of enemy alien residents of the country, and the President, in proclamation, has given explicit instructions regarding the conduct of these "enemy aliens." But an American-born citizen, or a naturalized citizen, is not an alien, and when the self-seeking individual, whether he be a lowly vagabond or the high official of a city, tries to gain notoriety by persecution of these people, they become even worse enemies of the country than those who are fighting against it.

Too many of our people cannot differentiate between freedom and license. What is free speech to one becomes an offense to another, and the offended one takes his freedom of speech to mean license to him, while it means no speech to those of different opinion.

Honest critisicm without vituperation is good for the country as well as for the individual; honest opinion, clearly and calmly expressed, is the safety valve of our constitutional rights; honest beliefs, conscientiously carried out without detriment of our fellow man, make for the broadening of our ideals and the upbuilding of our bulwarks of security.

Calm and clearsighted observance of conditions, coupled with cool judgment at all times is the present need of our country.

We are beginning to raise an army to send to war with Germany and the Central Allies of Europe. Just how big that army is to be, and just what is to be done with it, is entirely a matter for the military experts to decide. It is not for us, as individuals, to question the process by which the war is carried on.

It is for us, in every possible way, to hold up the hands of our country in its time of stress and while the flower of our manhood is being sacrificed to the God of War, it remains for those of us who remain behind to do our bit in the way that will best serve the interests of the Land of Liberty.

Home Guards and Defense Corps are being formed all over the State, unfortunately in some instances for no other reason than to give to demagogues opportunity to achieve brief notoriety, but generally with the earnest desire to serve the country for the country's good, and willing to do whatever they may be called upon to perform.

A Defense Corps, constituted of men who have passed the age of limitation to military duty, is in position to do greater work for the future of our democratic insti-

tutions than even the army bearing arms at the front. These men, who signify their readiness to "do their bit" to the best of their ability, can exercise a wonderful moral influence in their communities; they can frown down upon those individuals who become centers of incipient mobs for the punishment of helpless citizens who have the lineaments or accent of the Teuton; they can teach proper reverence of the Flag so that it will not become what is now so common all over our city, a bedraggled and torn piece of bunting with its colors so run together as to become almost indistinguishable; they can teach tolerance of opinion and with mild and calm talk check the excited vituperation so prevalent on our streets, which vituperation can but offend the most patriotic American citizen if he happen to have some German blood in his veins.

In this work they will be giving a far greater service to the country than by guarding market gardens, reservoirs or railroad tracks. They will be teaching to the ignorant the true ideals of American freedom, and will be building for the future of the Nation by inculcating the doctrine of fairness instead of the dogma of hate.

To do this work they will not require the paraphernalia of war, the trappings and glitter of uniform nor the military precision of carriage. They need but show by preachment and example that there is something more to American ideals than bigoted ideas of superiority, and that there is something more to patriotism than loud talk and mob rule.

Many of us are not in agreement with those who think this war a necessity, yet the time has gone by for us to talk against it. It is a condition that now confronts us and not a theory, and this condition must be met with every ounce of our energy and with every effort to come through the trouble with honor for the individuals as well as the Nation.

It is the honor of the individual American that those of us who are not to be called upon to go to the front must guard, and this can best be done by reason and calmness in meeting the emergencies that must arise from irresponsible mob action of those who trail the glory of the Flag in the dust and besmirch the name of patriotism, in ostensible effort to elevate both.

Economy versus Waste

To this caption might be added "Conservation vs. Hysteria." Just because we are confronting one of the most serious conditions in the history of the Republic we are also deluged with theories, some sound, but mostly absurd.

Probably those that may be classed as most absurd are the theories advanced regarding our expenditures.

It has come to be generally accepted that we must not prepare for the future, for if we do we are immediately classed as "food hogs" and are told that we are "unpatriotic." If we lay in our ordinary supply of provisions covering family necessities we are told that we are taking just that much out of some body else's mouth. Just how or why is not clear.

The thoughtful woman who has a family to look after utilizes her resources to serve the family to its best advantage. If she has small means, coming in in small amounts, she buys accordingly, and also pays excessive prices for commodities. If her income is moderate she buys moderately but in such quantities as will give her best prices on the supplies. If she has more than moderate income, if a good housekeeper, she will buy her supplies in quantities that will carry forward the family exigencies for a month, or two months, or six months or a year, as the ability permits. In doing this she follows the strict rule of economy.

Now come the hysterical theorists and call upon all people to buy in small quantities, and others say we must spend more for luxuries and unnecessaries in order to keep the wheels of commerce turning. We are told that notwithstanding the fact that while our incomes have not increased and while cost of necessities have doubled, we must buy even more than we did before the war came.

In England conditions are entirely different than in America. There they depend upon outside countries for their supplies. Here we not only supply ourselves but have enough to supply England. In England there has come a necessity for a stringent food restriction because the supply has been greatly limited owing to U-boat activity and owing to the fact that the population has turned from the channels of peace to the arts of war and are not producing food products. In America the only reason there will be for food restriction will come from sending away our food needed at home because those who have it can obtain higher prices by so doing than by selling it at home.

Let us not jolly ourselves with the idea that our sending food to Europe has any other than a commercial basis. It is a matter of recent record that the shipment of supplies to England was stopped because the money for the products was not forthcoming. We are not sending food to England and France through any high ideal of compassion or sympathy. We are sending it because they need it and can pay for it. This may sound brutal, but every one who analyses the situation knows it to be the truth. That it is true is emphasized in the statement made that the money raised by the $7,000,000,000 "Liberty Loan" will largely remain in the United States to pay for supplies for the nations at war in Europe.

With all our talk about our ideals we are not going to *give* that money to Europe, nor are we going to *give* our food to the Entente Allies. We are going to sell it and if they do not pay for it they cannot get it.

We have given millions of dollars in food and supplies to the starving Belgians, but that was charity work.

We are not going to give millions to the fighting English, French, Italians or Russians, for that will hurt our commercialism.

Let us look at this matter from a sane standpoint, and let us not be rushed into absurd situations because of the hysteria of some and the sordid desire for increased wealth of others.

Just why a woman should be censured for buying a sack of flour, a sack of sugar, a sack of beans or a case of canned goods at the present time, when those are the quantities she always buys, is not clear. Certainly her not buying them will not benefit others who need them. It is claimed that this buying in unusual quantities is the cause of the increased prices.

If that be true, and undoubtedly it is true in a measure, then it means also that sordid and greedy merchants have grasped an opportunity to enrich themselves by extortion because people wanted unusual quantities. If the supply is sufficient it makes no difference whether the consumer buys it all at once or in driblets. There is no reason for increasing the price just because of excess purchases. The retailer increases his orders because his customers increase their orders. The wholesaler immediately calls on the jobber and the jobber on the manufacturer and the word goes forth to make a little more money. Each intermediary gets his share and the family pays the bill. Then, to cap the climax of absurdity, the family is blamed for the whole scheme of extortion.

There is but one thing necessary to teach the average family in the United States, and that is conservation and avoidance of waste. Eliminate the waste of the average household and the expenses will be reduced one-third. There are so many methods of waste that one might write a goodly sized book on the subject. Waste does not consist entirely in what you throw in the garbage barrel. There is waste of energy, waste of values, waste of fuel, waste of light, waste of thought.

There is no economy in buying foods that are not nourishing, if we consider the food value alone, but there is economy in buying certain foods that are considered luxuries if they assist in assimilating the otherwise unpalatable nourishing foods. A meal with highly nourishing foods may not have half the actual value of one where there is also something to please the taste or even the eye.

A badly cooked meal is wasted no matter how highly nutritious the food may be or how plentifully one may be served with it.

Save waste by good cooking as well as by buying good food. It is no economy to buy cheap vegetables that will not be eaten. Cheap peas, for instance can be had at less than the price of good ones, but the cheap ones are dearest because more than half of them must be thrown away. It is not necessary to enumerate.

Patriotism is the love of country that comes from the love of locality, which is the result of the love of home. The home of the individual is the actual basis of all patriotism, and if we neglect the home we cannot be true patriots, no matter how many flags we wave or how loud we cheer at the sight of a picture of "Our President," or how reverently we stand at the playing of the "Star Spangled Banner."

Give me a nation of home lovers, and of home providers and I will give you a nation of patriots.

Hoarding, Cornering and Speculation

Much indignation has been voiced because a few farsighted women have had sufficient mentality to lay in a little larger supply of staple foods against a rise in price. Manufacturers, jobbers, wholesalers, retailers and newspapers have joined in the chorus of condemnation and all the advance in price of these commodities has been laid at the door of the woman who thinks.

How about the men who have filled warehouses with food products, and who are backed in their endeavor to enrich themselves at the expense of the people by the banks that loan money on warehouse certificates?

Are they not entitled to some of this general condemnation?

Are not the financial institutions which aid in these food corners by loaning money on warehouse certificates equally culpable?

Bankers will tell you that their business is to loan money on first class security, and the National Reserve Act calls warehouse certificates on food products the highest class of security. It has been stated frequently that certain speculators have 60,000 pounds of beans in certain warehouses in San Francisco. Other speculators are charged with having tons of onions, rice, potatoes, canned goods and other food products, stored in warehouses, holding them for the top prices that are bound to come out of the war.

Yet the woman who provides for a minor contingency by buying two sacks of flour where she formerly bought but one, or who buys a sack of rice where she formerly bought a dollar's worth, is condemned and to her door is laid the increase in prices.

We are called upon, every time we go to a theatre, to applaud the sentiment, "America First." Should this not apply to our babies as well as to our officials?

It is all right to feed Belgian babies, but it must be remembered that there are American babies that need feeding as well. Within the week the newspapers had a news item which told of a woman, here in San Francisco, who dropped dead from lack of food, while she was trying to get a little for her starving children to eat. But these babies are American babies and they must not put forward their claims so long as certain limelight seekers want a lot of glorification out of their public "charity."

Conditions even here in San Francisco, where we boast of the fact that we have no such poverty as is to be found in New York, or in England, are fast becoming serious, and it is not a far step from distress to food riots. An early morning walk will show in San Francisco an unheard of condition. Never before have the big vegetable markets been invaded by poor women who gather the refuse from the gutter and carry it home to their babies, yet that is now the case.

In certain parts of San Francisco murmurs are heard in protest against the storing of food and raising of prices. Already fingers are pointing to the warehouses where the hungry believe food is being hoarded for higher prices.

An hungry people is an unreasoning people, and while the banks which hold warehouse certificates as security are undoubtedly fully protected by insurance, it is far better to prevent a serious condition than it is to foster it.

One never knows where a fire will stop spreading, or where a mob's energy will be diverted.

We are not trying to be alarmists, nor have we the slightest desire to be classed as anarchists, but it certainly is not wise to blind our eyes to a condition holding so much of seriousness as the present one, when we are holding up the careful housewife to scorn because she "hoards" food for her babies, and at the same time giving "aid and comfort to the enemy" by helping the speculator who hoards to make money out of our necessities.

America has been cursed with war scandals every time we have been in a war. The man who sells bad canned goods, shoddy clothes, or adulterated medicine for the use of our soldiers, comes in for highest condemnation. Certainly those who make use of our dire necessity to starve our babies, whether they be speculators or those who profit vicariously thereby, are equally deserving of censure.

We are told by the newspapers and by advisors of every high degree to go right along with our buying of luxuries, our high living, our spending, and thus we will be serving our country by keeping the wheels of commerce moving. How about the man with a family who suddenly finds his income going but half as far as formerly? How about the salaried man who gets no more money but finds that he must pay twice as much for food for his babies? Why must it be the woman who is constantly struggling with the problems of housekeeping who is told to economize while her husband is told to go on buying cigars, tobacco, cigarettes and drinks to help commerce?

Is it not about time we injected a little sanity and common sense into these economic discussions?

Banks are advocating thrift and calling on the people to save their money and put it into banks or government bonds, and at the same time advising these same people not to curtail their expenditures. We have almost reached the point of *reductio ad absurdum* in our mental gymnastics over the economic problems of this war, and it is about time we were looking conditions square in the face and carry out to its natural conclusion the idea of "America First" by looking out for the legitimate interests of the people whose struggle for existence is becoming more acute with each passing day.

War Finance

A new period in the American money market is before us and the reign of cheap money, going back to the beginning of 1915, is gradually coming to a close. From all appearances we are now facing a slow firming up of money rates, the final outcome of which is beyond present calculation.

The entrance of the United States into the world war has much to do with the future of money. She signalized her entrance by the issuance of $7,000,000,000 bonds, of which $3,000,000,000 is to be loaned to the entente allies. From what is going on in Europe in the way of expenditures it can readily be conceived that this is but the beginning of our expenditures. England is now spending $35,000,000 a day in her war budget.

During the past two years the United States has had wonderful opportunity to fortify its financial resources. The banks are plethoric with deposits and gold reserves, and it is this great accumulation of wealth that will be drawn upon to meet the crisis. The immense obligations we have entered upon in respect to the equipment of our own forces, financing the allies, increasing the food supply and rehabilitating the world's shipping, must entail immense loan operations, and money rates cannot help reflect this condition.

The best posted international bankers do not expect to see wide fluctuations recorded in foreign exchange during the early future. They argue that the effect of the huge credits that are to be granted by our government to the entente countries has been discontinued, at least temporarily. But even allowing for a further hardening of time money rates some experts express the belief that the exchange market will continue to display firmness. They take this view of the situation because definite plans for financing the Allies to the extent of about $500,000,000 a month are being arranged, which is calculated to act as a sustaining factor in the market for exchange in London, Paris, Rome and Petrograd.

To avoid money disturbance no attempt will be made to bring out too large an issue of bonds at the outset. For this reason those who predict a sharp advance in interest rates are not likely to have their expectations fulfilled.

An important factor in the future of money rates lies in the fact that much money must be diverted from ordinary channels to assist in financing the farms of the country, for it is a recognized fact that is well recognized that this war will be won on the farm. Much stress is being put on the importance of increasing the production of our farm lands, and even when the breaking and planting of government reservations is under consideration. As there was not enough labor in the United States last year to care for the small crops of that time, it would seem that farm production this year must depend upon a mobilization of those who cannot be taken into the fighting army, for the purpose of working the farms.

Several would-be patriotic citizens are trying to get into the limelight and at the same time have their acreages increased in value by offering raw land to anyone who will break and plant and care for it for a period of two years. It is a splendid idea—for the land owners. Their land will be doubled in value by the work and it will cost the owners nothing.

But what about those who take advantage of this "generous" offer? In the first place they will have to have sufficient funds to build a little house for themselves, outbuildings for stock, get tools and implements, horses and cows and seed, and then sufficient provisions to carry them until the crop is garnered and sold. It looks good on paper but is not at all practical except for those who have sufficient money to finance themselves, and those who are so well fixed can select their own land and own it at practically their own terms.

There are hundreds of men who are good farmers and who would largely increase the food production of the country if they could receive the necessary backing to carry forward the work. If those who have money to loan would look more to the "personal equation" during the present stress, it would go far toward relieving the situation. The farm cannot be worked without funds, any more than any other business can be carried forward without money. The Farm Loan Bank that was touted to be going to do so much for the down-trodden farmer, is a joke when it comes to real business. It takes ten good farmers to join together to get a loan and there is not a bank in the country or a money lender that will not lend money on a note signed by ten good farmers and backed by the same mortgage demanded by the Farm Loan bank.

The way to increase the production of the farms of the country is to give the farmers a chance.

CALIFORNIA'S MINERALS AN IMPORTANT WAR RESOURCE

The State Mining Bureau, under the direction of Fletcher Hamilton, State Mineralogist, is starting a field campaign to report on the economic minerals of California, which have an important industrial and military bearing on the present war situation. For the past four years the State has been working on a complete survey of the entire State's mineral resources by counties, field work for which is now practically completed and the results in part published. Particular interest and value attaches at the present moment to our available supplies of chrome, coal, iron, magnesite, manganese, molybdenum, quicksilver and tungsten.

The extent and availability of our petroleum resources, which are so important in modern naval operations, have already been thoroughly covered by the Bureau in its work of protecting the fields from damage by faulty operations. As data on the other minerals are already well in hand, trained geologists and enginers of the Bureau's staff are being sent out to bring the information down-to-the-minute with relation to the latest developments in the above named item. The report will cover the location, size, accessibility to transportation, character, quality, and state of development of every known deposit throughout the entire state.

W. Burling Tucker, Chief Field Assistant, will visit the countries south of the Tehachapi; Clarence A. Waring, field assistant, the counties along the Sierra Nevada Mountains from Tulare northward; Emile Huguenin, field assistant, the counties along the Coast Ranges from Monterey to Del Norte; Walter W. Bradley, Mining Statistician, Siskiyou and Shasta Counties, also quicksilver and research work on the metallurgy of quicksilver. Advance notices will be sent to the local newspapers from time to time, of the arrival of the engineers in the various districts, so that those interested in the mineral properties may be fully advised and co-operate to the fullest extent in this patriotic work.

The conservation and utilization of our mineral resources, while highly important at all times, are imperative in the present exigency. With the exception of a small tonnage of chrome from Oregon in 1916, and of magnesite from Washington in 1917, California has been the sole source of these two minerals in the United States. For many years California has been, and still is, producing from 50 to 80 per cent of the quicksilver yield of the United States. This total is absolutely essential from a military standpoint, as there has not yet been produced a commercial substitute for it in the manufacture of fulminating caps for explosives. California is one of the two main producing states of the Union. This metal is especially valuable in the manufacture of alloys for high-speed tool steels.

All persons interested in these minerals are earnestly urged to co-operate with the State Mining Bureau by meeting the field men while in their district or by communicating direct with the State Mineralogist at his office in the Ferry Building, San Francisco.

NATIONAL SHIPBUILDING ACTIVITY

The renewed activity of shipbuilding in Germany is apparently significant of a belief in that country of a termination of the war in the near future, as German shipping companies are making great preparations for resumption of business after the war.

Since the beginning of the war the German shipyards have built tonnage totaling three quarters of a million tons. Through this activity in shipbuilding, says the "Hamburger Fremdenblatt," "Germany is assured of a superiority over the commercial fleet of England."

This is as it may be, but the British shipyards have not been idle, says the New York "Maritime Register". Nearly as much has been built by them as in times of peace. This has totaled for the years 1915 and 1916 about three million tons deadweight, which gave England approximately as much tonnage for freight as before the war.

The loss of British tonnage due to destruction by enemy submarines has been considerable. To replace this loss and increase her tonnage capacity the building of new ships aggregating two million tons is now under way and being rapidly progressed.

The mercantile marine of France has not, according to statistics given in the "Mercury" of France kept up pace with commerce, although for the past three years the French merchant marine increased at the rate of sixty thousand tons per annum. In addition her shipyards have been building vessels for other countries.

Various suggestions have been put forward with the object of bettering this condition in order to meet the necessities of her commerce after the war.

In the preparation now making for the great commercial activity that will come after the war the United States has not been idle.

Our shipbuilding has increased wonderfully since the beginning of the war and at the present time the American shipyards have under construction or order six hundred and eighty-two vessels of an aggregate of over two million tons, fifty-seven of which are for the navy and ninety-nine for foreign flags.

THE COPPER SITUATION

The continued demand for copper, as evidenced by the monthly requirements, is sufficient evidence that the metal is to be used in large quantities for years to come. The industrial demand has not for some considerable time been bidding for what would be their normal requirements, due to a recognition of the present heavy demand for copper along special and urgent lines.

This industrial demand has been held in leash and will later assert itself at a time when the market is easier than the present or immediate future indicates. The immediate demands for copper includes the requirements for shipbuilding, munitions, electric products and automobiles. The consumption for these prominent lines will continue the heavy demand, which will be further augmented from dorment industrial requirements as above referred to.

Some attention is given to an agreement of a number of large producers to provide the American Government with copper at a special price of 16.6739 cents per pound. This, however, should not have any perceptible effect on the present earning condition of copper producers, inasmuch as this represents only about 2 per cent of the annual output.

It is also understood that should any great increase in Government demand require a large additional supply, that it will not be the policy of the Government to demand delivery or negotiate for its being supplied at a point which may check national prosperity.

The market has of late displayed some irregular features with some offerings of nearby copper, but such transactions were in moderate volume. Prominent holders give no outward indications of being ready to make a general cut in market prices.

California Derrick

The Oil Authority of the Pacific Coast

PUBLISHED MONTHLY
—BY—
The California Derrick Publishing Company
DR. CLARENCE E. EDWORDS .....Editor
E. L. MACKEY ..... Business Manager

OFFICES
509 Sansome Street, San Francisco, California
Telephone Sutter 2984
Editorial Rooms 417 Montgomery St., Room 422
Telephone Douglas 3617

Subscription price, per year, $2.00 **Foreign $2.25**
Advertising Rates on Application
Entered as second-class matter February 17, 1912, at the postoffice at San Francisco, Cal., under the Act of March 3, 1879.

THE DERRICK'S CREED

The California Derrick has no axe to grind, no company to promote, no stocks to sell, no "interests" to bow to. Not dominated by any company, but faithful to California's Oil Industry.

SIXTY PER CENT UNFIT.

What a terrible arraignment of our country is to be found in the reports of the examining surgeons who are passing on the young men volunteering at the Nation's call to arms.

The worst of it is that it is not a local condition.

From every place where examinations have been made comes identical reports. Sixty per cent of our available men are physically unfit for service.

Naturally these first examinations will be extremely rigid. The bars will not be let down until we have killed off the best of our young men and have no more of that kind to send out.

But now, in the beginning, we find that sixty per cent of the young men of the United States will not stand the test.

Will some scientist please arise and tell us why.

Do our young men go the "pace that kills?" Are their habits responsible for this terrible deterioration? Is it possible that the habits of their fathers and mothers have something to do with it?

Is there not a vital lesson in the fact? Is it not time for universal military service? There is nothing better for the growing youth and the young man than the discipline of the army service. It teaches him self confidence and self respect as well as takes him away from youthful errors of judgment that so frequently break down his health.

When we think of the fact that six out of ten of the young men who have offered their services to Uncle Sam have been rejected by the examining surgeons, it gives us reason to fear for the future of the nation. Not so far as our ability to make war is concerned, but so far as the race itself is of essential importance to our future as a Republic.

Californians have prided themselves on the fact that the young women of the state have stood above those of all other states in their physical perfection. Yet in this same California we find our young men averaging the same sixty per cent of deficiency that is found elsewhere. Is it not time we were awakening to the importance of providing for our future generations? We cannot expect a good physical race when we mate an unsound man with a sound woman.

"CHEAP" MENUS AND FOOLISHNESS.

Everybody seems to be rushing to print just now with what they are pleased to call "cheap" menus. They are busy telling the poor people what to buy and what to cook and how to cook it, until one would almost think that the knowledge of cookery and proper food was confined to a select few.

But when we come to analyze these "cheap" menus and these directions for inexpensive living we immediately conclude—that is, if we have had any experience whatever—that those who are supposed to get enlightment from these lectures can give the informers information.

When somebody with the assurance of a High School girl and the knowledge of a grocery clerk starts to tell the "poor" what and how to eat, there is always a menu that begins with soup, then has entree, roast and dessert, with a salad sure to be sandwiched in somewhere.

The menus, as a rule, call for "10 cents worth" of this or "25 cents worth of beef" or "5 cents worth" of some vegetable. Just try to buy 25 cents worth of beef for a family of five, or 5 cents worth of any vegetable for the same family and see how far you will get.

What is needed these days is instruction of actual food value and on the matter of conservation as against waste. It would not be a bad idea to have a course of instruction given by a lot of Italian, French or German mothers. They have been taught for generations to prepare food properly and serve it properly as well. When it comes to an inexpensive menu they "know how" to get good food, well cooked and full of nourishment. That is what the average American woman, and many may be found in these volunteer teachers, sadly lack.

BROWN SHALES

By A. S. Cooper

In reading the logs of wells and elsewhere, we often find an expression such as "light brown shales and oil." "Brown shale show of oil." "Oil comes from the brown shales." "The brown shales are almost invariably bituminous, varying from a trace up to the point of yielding petroleum in producing quantities." "At this point a considerable light oil came up through the shales," and so on.

Such expressions are misleading. When shales are saturated with liquid petroleum they are black, when the shales contain brown friable bitumen, which is a solid, in an extreme state of porosity or subdivision they are brown. Petroleum oil will not flow from shales to drilled wells or seepages, even when the shales are saturated, consequently any production of oil from a shale formation must come from fissures and cracks in the shales.

Again it is possible that what is called a brown shale by the driller may be blue or yellow shales, containing fissures and cracks filled with black shiny frangible asphaltum. When this asphaltum is ground to an exceedingly fine powder by the drill and mixed with blue or yellow shales, the powdered asphaltum is brown and gives this color to the finely ground shales.

Brown bitumen is not oxidized petroleum, as it is found over a thousand feet below the line of permanent water where no oxygen could reach it.

If brown shales containing brown bitumen be soaked in crude petroleum they will become black.

In The Oil Fields

Work in California oil fields during the past month shows no cessation of effort to increase the supply of oil. According to the report of the State Mining Bureau, 372 wells have been started since the beginning of the year, and 276 old wells have been started redrilling in the same time.

The amount of crude oil stored in California is but about two-thirds the amount in storage at the same period of 1915, and this in face of the fact that there are now more wells producing than at any previous time. This is a most serious condition and one that must be met in some way, either by governmental action in permitting the operation of wells on disputed lands, or by the bringing in of new territory.

One of the most serious obstacles to the drilling of new wells is the shortage of material. Steel mills have all been sold out for some time and are taking orders only "subject to delay in delivery." The earliest delivery on orders now placed will be late in August and the bulk of the orders cannot be filled until after the 1st of January next year.

The California demand for material for the erection of new rigs, and for casing is greater than ever before. The result is that wildcat work is being held up and new fields that give greatest promise are compelled to wait for material. All new companies and syndicates that planned to rush their work are now marking time and hoping against hope that some solution will come to the problem. In addition to prospective work being stopped, many new wells that started have been held up for want of casing.

McKittrick District.

M. J. Lamance, of Oakland, who is largely interested in oil properties in the west side of Kern county, announces that he will begin development at an early date on section 20, 30-22, by putting down a test well.

Having disposed of their holdings in the Lost Hills to San Francisco capitalists, the five men comprising the stockholders in the Lost Hills Development Co. have petitioned the superior court that the corporation be dissolved. These men are Dan Calcote, president; E. C. Farnsworth, secretary; B. J. Ball, of Visalia, and C. S. Scribner and Frank H. Buck of San Francisco.

There is in the banks of Visalia now $1,600,000, or thereabouts, being the purchase price of the Lost Hills Development Co.'s oil holdings.

Although the first development work in the Belridge oil field was commenced only seven years ago this summer, such remarkable strides have been made along the line of production since the protracted period of depression in the petroleum industry ended eighteen months ago, which was followed by drilling of many new wells, that this district is now considered one of the best in the state, with most promising prospects for extensive enlargement. Conclusive evidence as to this is furnished by the rapidly increasing number of new derricks in course of erection, and plans already formed for additions to the long list.

The General Petroleum Corporation started five new rigs and the Marino Oil Co. seven all in the same township and range—27-21—the General Petroleum building in section 2 and the Marino in section 3. The General Petroleum has received during the past week or two several cars of pipe and other material, notwithstanding the general delay in getting orders filled by eastern mills, and is enabled thereby to prosecute to an appreciable extent work that had months ago been determined upon. This has also been the case with the Standard Oil Co., whose recent activities in the Belridge, McKittrick and Lost Hills fields have added very much to their prestige.

Fullerton Field.

Every company operating in the Fullerton field is going ahead with oil development work.

The Amalgamated Oil Co. has entered upon a development period and outlined a quantity of new work that will keep its force busy for some time. Work has been resumed on Hualde No. 9, which had been standing idle several weeks, and two new wells will be drilled.

The Birch Oil Co. is still shutting off the water.

The Fullerton Great West put No. 3 on the beam last week, but the well is making a lot of water and it is thought the casing has developed a hole somewhere.

The Standard Oil Co. has completed the deepening of Emery No. 2 and the well is making eighty barrels of 27 gravity oil. On the same lease the Standard has cemented No. 31 at 3440 feet and No. 32 at 3518 feet.

On the Murphy lease No. 23 has been cemented at 3600 feet. No. 27 is standing cemented and No. 29 is fishing for drill pipe.

On the Whittier property the Standard has cemented No. 41 at 3048. No. 46 is cemented at 1544. No. 47

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has been cemented at 1510, and a new derrick has been erected for No. 50.

On the Baldwin lease the Standard started drilling early in the week on No. 2.

Maricopa.

A big well that reminds old-timers of the days when the M. J. & M. & M. was operating, has been brought in by the Standard, which now owns the property. The flow followed the drill from the oil sand at the rate of 1080 barrels per day. The well is the No. 38 on the M. J. & M. & M. property, recently taken over by the Standard, and is the first of a series of new wells to be brought in. Wells 36, 37, 39 and 40 are expected to come in within the next two weeks and this will mean a big increase in production for that lease

Taft.

The Calidon Petroleum Syndicate, after a long period of idleness, is preparing for much action on its property on section 19, 31-23 in the Fellows district. A pole line is now being run that the lease may be supplied with electricity.

The Hale Syndicate in the drilling of its wildcat well in the McFarland district is now down 400 feet with good progress being made. Superintendent Troy Owens of the Hale-McLeod Oil Co., is spending much time at the wildcat, using all his knowledge gained in drilling many wells in this field in the care of drilling in the new territory.

Oscar Martin, mineral inspector for the United States general land office, is spending a few days in the field on a mission which he is not making public.

E. T. Edwards, one of the original well-drilling contractors of the Kern county oil fields and who recently sold his interests in the California Well Drilling Co., has embarked in business for himself with O. R. Tucker as a business partner. Edwards & Tucker will do general well contracting with completions guaranteed.

The No. 21 well of the St. Helens Petroleum Co., on section 16, 32-24, in the Buena Vista Hills, is standing rigged up ready for drilling. The crew now in charge of the No. 20 well will be transferred to the No. 21 as soon as No. 20 is in the sand. No. 20 is down 3100 feet.

The No. 35 well of the Midway Gas Co., on section 7, 32-24, in the Buena Vista Hills, is in with an excellent gas production. The well is on Kern Trading and Oil Co. property. The gas was encountered at a depth of 2467 feet.

The number of active drilling wells in the Midway field increased from 88 on the last day of February to 97 on the last day of March. This increase of nine wells being drilled is an indication of the enormous amount of work being done in this district at the present time. Much more drilling would undoubtedly be done if it were not for the fact that 10-inch casing is practically impossible to get. A few carloads have been received in the past few weeks, but not nearly enough to fill the demands that are made every day.

San Luis Obispo County.

Wildcat work in San Luis Obispo county is delayed owing to difficulty in getting material. A number of companies are waiting for casing and as soon as the material situation clears up there will be development in many parts of the county, especially over toward the Carissa plain. Around Simmler the Oakland people who have formed a syndicate for exploitation of this part of the state are waiting for material. They have shipped lumber and other material to the property but are held up owing to lack of steel.

The recent purchase of 10,000 acres and leasing of an additional 13,000 by the Standard, on the Estrella ranch, west of Shandon, indicates that this company has faith in the future of this part of the state. It is understood that the Standard denies this deal but there is a very persistent rumor that it has been effected.

South of the Sacramento ranch a derrick is up and preparations are making to explore a 240 acre tract as soon as material can be secured. This land lies rather far to the southwest of the strike but the owners are so sanguine that they have withdrawn their property from the market.

The Co-operative Oil Land Subdivision Company is all ready to drill on its property east of Shandon and is held up from lack of material. There is a 90-foot derrick in place with both a standard and Keystone rig ready for operation.

At Cedar Spring well on the San Juan ranch, considerable difficulty has been encountered owing to the tools being caught. The tools are now about recovered and it is reported that there is a good flow of oil which will be brought in. The syndicate operating this well is not hampered because of the prevalent lack of material for when the well was closed down five years ago a large quantity of casing was on the ground.

It is authentically reported that the Union Oil Co.'s Newlove well, No. 17, in the Santa Maria field on the north line of the Pinal-Dome on the Harris property, has come in with a production of 2500 barrels of 28 gravity oil per day. The Harris property consists of about 5000 acres, and is operated by the Pinal-Dome Co., in which San Luis Obispo people are heavily interested.

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THE FIRST NATIONAL BANK OF SAN FRANCISCO

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Notice of intention to remove its place of business from Oakland to San Francisco was filed today in the superior court by the Casmalia Syndicate, a $1,000,000 corporation. Herbert Fleishhacker and Clarence J. Berry of this city, and Oakland and Merced capitalists are stockholders.

The Casmalia Syndicate was organized to handle products of petroleum natural gas, and to that end will erect a refinery here.

Coalinga.

The Spokane-Coalinga Washington Oil Co. and the Berkeley Coalinga Oil Co. have been sold by E. J. Slater, of Oklahoma, and S. L. Theege, of Los Angeles. The wells are to be improved.

The Associated Oil Co. has been very actively drilling on all properties, many strings being at work under the supervision of W. A. Greer. On the old Aztec property, on section 31, 19-15, the drilling of well No. 21 has reached a depth of 2060 feet. The well on section 8, 21-15, in which more interest is being shown by other companies is down to the 2965-foot mark.

Never in the history of the Shawmut Co. has that concern seen such activity. Lumber and material is on the ground for future use, and the drilling well has reached a depth of 836 and 1358 feet.

The Arica Oil Co., on section 7, 20-15, has a drilling well at a depth of 176 feet. It is hoped this development will continue.

The K. T. & O. is also quite active in its drilling. Superintendent C. A. Hively has 10 or 12 wells upon which work is being carried on. A good producer was brought in lately on section 1, 20-15, giving about 120 barrels of fluid daily. Several wells are rigging up for rotary work on section 3, 20-15 and 1, 20-15.

The Lakeport Petroleum Co. has two wells progressing nicely, the No. 16 having reached a depth of 2640 feet and No. 24 is down to 1660 feet.

The Standard is not lagging behind in its work, drilling taking place on section 22, 19-15, and 36, 19-15. On the first named section well No. 23 recently spudded in, has reached the depth of 300 feet, and on 36, 19-15, No. 6 has passed the 3000-foot mark.

The Coalinga Mohawk, section 12, 20-15, has brought in a 350-barrel well of 23 gravity oil. It is expected that another good producer will come of the drilling of a well now at a depth of 3410 feet.

The Associated Oil Co. well 5-H, on section 8, 21-15, has been completed at a depth of about 4000 feet. Light gravity oil and a yield around 150 barrels a day was brought in. This will have an important bearing on future development work in that locality as a result of the Associated company's success.

On section 6, 20-15, the General Petroleum Co. has erected a large 65-foot flag pole on top of the hill from which Old Glory floats. This is a high spot on the West Side field and the flag can be seen for a great distance.

The Boychester Oil Co., which has been idle for a long time, is now rigging up its old well expecting to start work again immediately.

The M. K. & T. Oil Co., on section 8, 20-15, has made a formal abandonment of the No. 2 well. The two wells on this property are rather famous to all oil operators, especial-size casing and tools having been used to complete them, which about doubled the cost of drilling.

The Claremont Oil Co. lease on section 24, 20-14, is busy with development work and improvements.

Several properties on section 2, 21-14, have been taken over by E. J. Slater and S. L. Theege of Los Angeles. This deal will take in the Spokane-Coalinga, Washington Oil Co. and the Berkeley-Coalinga, where for several years no active work has been done. Arrangements are about completed by the gentlemen to do considerable work on wells already drilled in and put them on producing basis as soon as possible. Both men are practical oil operators and it is reported that they will personally take charge of the work. With the starting up of the Boychester on section 18, 21-15, south of this section, the extreme west side field will soon see life once more in these parts.

The Coalinga Mohawk Oil Co. on section 12, 20-15 expects to start soon on the drilling of five more wells. The work is held up at the present time awaiting material. Indications point that the wells are to be located on the north line of this property. An idea of the investment can be had by figuring that each well will cost in the neighborhood of $35,000 to $40,000.

Work still continues on the Crescent Petroleum Co. well in the south field, on section 2,25-19. The hole has been drilled to the 2100-foot mark, where one screw was run into a good-looking sand with considerable gas pressure. Some time ago the management bridged off at 2060 feet, and this will be drilled through as soon as the water is shown to be shut off at the lower depth. Local capital interested in this wildcat still has high hopes of bringing in a producer.

STANDARD OIL HEAD URGES CO-OPERATION

A. C. Bedford president of the Standard Oil Co., of New Jersey, in an address in Brooklyn on "The Mobilization of Industry for War", declared that in modern warfare "The man behind the gun" is still more important; but "the vital, allconclusive factor now is 'the machine behind the man.' "

"If this were merely a war between the individual armies of the two groups of nations, it would be terrible, but relatively short-lived," said Mr. Bedford. "The preponderance of military personnel would probably be quickly effective. It is because the entire industrial life of all those nations has become involved that the struggle has taken on a titanic character, without precedent in history. This is fundamentally why the length of the conflict is so difficult to forecast; and why its results will be of such far-reaching effect upon the domestic as well as the international relations with every nation in the world."

MUST LOOK TO WYOMING FIELDS FOR LIGHT OILS

Oil men are agreed that it is to Wyoming that the oil trade must look for solution of the light grade oil situation. They are satisfied from what actual results so far show in respect of Wyoming's resources that this state is going to give the next big supply of light grade oil. Proven oil fields have been developed in sixteen of the twenty one counties in Wyoming and more than half a dozen Federal Trade Commission, transmitted in its report to the Senate.

COMPANY FORMED TO PROSPECT FOR OIL

Sacramento—The Laguna Oil Co. has leased about 13,000 acres of land in the vicinity of Clay Station and will start boring for oil in the near future. Oil seepage was discovered on the land some time ago by L. Gregor, local capital was interested and a company formed to purchase the land. Henry Mitau is president of the company and George W. Peltier is secretary. Leases for the property have been recorded.

TRADE COMMISSION REPORTS ON GASOLINE

Washington—That Standard Oil interests substantially dominate the gasoline industry was the finding of the Federal Trade Commission, transmited in its report to the Senate.

Refining, pipe line transportation and marketing of the finished product, the Commission declares, are controlled by the "oil octopus."

Real competition does not exist between the various Standard Oil companies because of interlocking stock ownership through majority share holdings by identical interests, the report says. Despite the dissolution of the so-called "oil trust" by the Supreme Court, the Commission has concluded that Standard Oil domination has a "fundamental bearing" on gasoline prices, declared to have been arbitrarily increased.

CASINGHEAD GASOLINE PRODUCTION EXPANDING

The production of casinghead gasoline, or gasoline extracted from natural gas either by a compression or an absorption process, is increasing in leaps and bounds. The production of this form of gasoline in Oklahoma alone in 1916 was almost as large as the entire production of casinghead gasoline in the United States in 1915.

Oil men closely connected with production in the mid-continent field say that at present the casinghead gasoline production of the mid-continent field is as large as the production of gasoline by the refineries of that section of the country. The eastern fields also are rapidly increasing their production of this class of gasoline. The product of the extraction stations is sold almost entirely to refiners, as it must be blended with lower gravity gasoline to bring it down to a safe and workable gravity. Price paid to the production companies range from 18 to 20 cents a gallon.

OIL EXPLORATION IN CHINO VALLEY

Jerome, Ariz.—The Chino Valley oil field, west of this point, across the Black Range and on the line of the Santa Fe Phoenix branch, is exciting keen interest here and in several other Northern Arizona cities, where companies have been formed for the exploitation of located ground. One company, the Chino, has a drill hole about 2000 feet deep into 110 feet of sand that bears oil. But the bore is water filled and present efforts must be confined to cementing off the unwelcome flow. When this has been done, sinking is expected to demonstrate the value of the well within a very few more feet. The company is headed by J. C. Heslet and N. D. Ross, both of Jerome.

NOT TO DRILL IN GOVERNMENT LANDS.

Los Angeles—Federal Judge Bledsoe denied the application of attorneys for the Southern Pacific Railroad that the company be allowed to drill 74 new wells in the Kern county oil fields. The government is seeking to preserve the oil wells. Secretary Daniels says, for the use of the navy.

Patented and Unincumbered Oil Lands For Sale

165 acres in the Parkfield District, Monterey Co., close to drilling operations. Water well on this property shows signs of oil.

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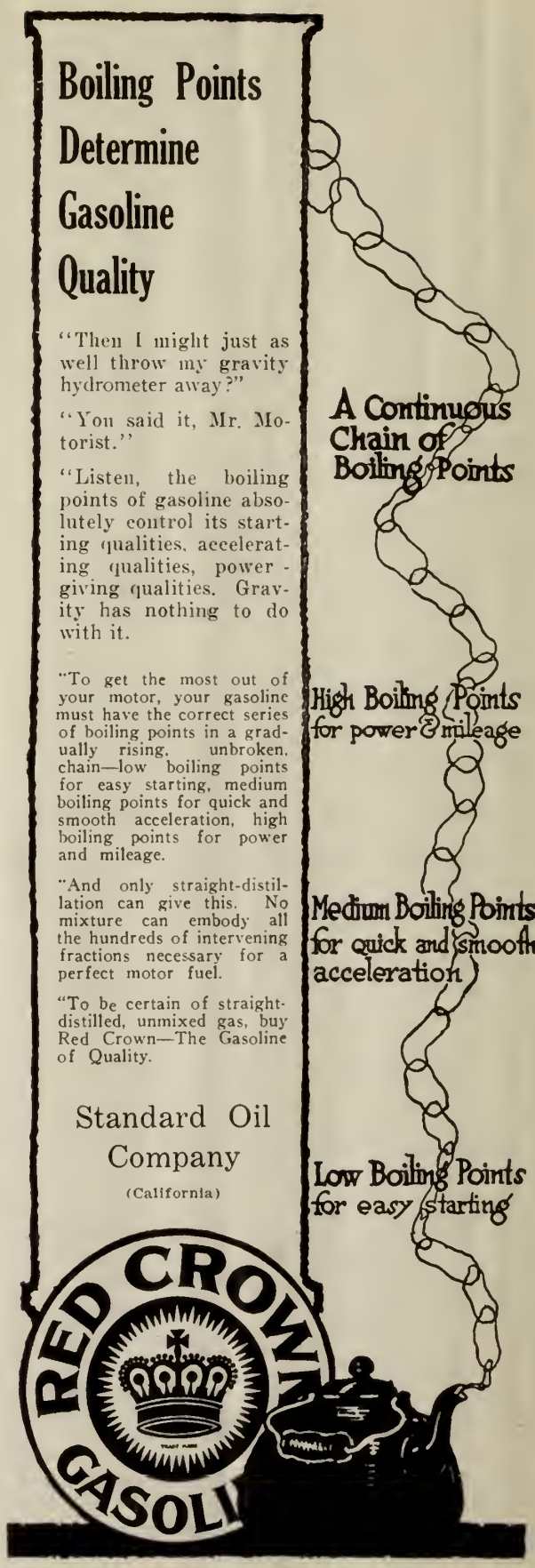
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SEVEN BILLION DOLLARS.

Congress has decided to have the country go into debt to the extent of $7,000,000,000. It is just as easy to say seven billion as seven million, or seven hundred, for that matter, but how many people are there who really have any conception of what seven billion means?

When the matter was under discussion an enthusiastic banker said it would be an easy matter to raise the money. "Why," said he, "I wouldn't be surprised if my state subscribed for one million of it."

It would take seven thousand states, subscribing a million each, to make up the necessary sum.

When the United States came out of her war from 1861 to 1865 she had a debt of $4,000,000,000, and it has not all been paid off yet. When France came out of her war with Germany she had a war debt of $4,000,000,000, and she had not finished paying it off when the present war began.

If every man, woman and child in the world would donate one dollar each the sum would not be much more than half of the required seven billion dollars to be raised by this bond issue.

As to what a billion means in time a billion minutes have not elapsed since the year 1, A. D. A billion hours would carry us back twenty times as far as the birth of Adam.

A billion dollars in gold would weigh about 3,000,000 pounds, and if stacked up in $20 gold pieces would reach more than a million and a quarter miles into the air. If a billion dollars in $20 gold pieces were placed end to end they would reach around the earth at the equator twenty five thousand times. The $7,000,000,000 the government is raising would practically cover the entire surface of the earth with $20 gold pieces.

The people of the United States can subscribe for $7,000,000,000, take these bonds and not interfere in the least with the ordinary operations of business.

WILL DRILL FOR OIL IN COLUSA

Williams—The representative of the big oil interests from a large eastern company who has been busy in and near Williams for the past two weeks, in obtaining options on the prospective oil land of the western portion of Colusa county, has now about finished his work and he has announced that his company will be ready to start sinking wells and drilling for oil here in the very near future.

This company feels certain that they will strike a good quality of oil in our foothills and they are expecting to exploit the field in a very extensive manner.

ISSUES WARNING ON GASOLINE

In a speech before the Midway section of the Society of Automobile Engineers, Dr. A. Burton of the Standard Oil Co., of Indiana said that unless conservatism and hoarding of gasoline were resorted to the supply in the United States would be exhausted at the end of the first year of its entrance into the war. He estimated the yield of the United States in 1917 at 2,500,000,000 gallons. Of this, he said 2,000,000,000 gallons would be used in automobile consumption and the remainder would be exported, leaving the military trucks of America without fuel.

Western Slope Oil Co., Phoenix, Arizona, has incorporated; $5,000,000. W. E. Hocker, J. N. Cook and J. G. Scott.

LEASES PROSPECT LANDS

Oxnard—W. D. Wilson of the firm of Wilson, McClour & Gordon of Los Angeles, has been busily at work in this section the past week signing up oil leases in the Somis and Las Posas sections. It has been known for some time that there were good oil indications in this neighborhood. Oil men who have examined the section say that the surface showing is very good and the little work done so far bears out this impression.

LAND BANK APPRAISERS NAMED

Announcement has been made of the appointment of Federal Land Bank appraisers by the Federal Farm Loan Board as follows:

Omaha Federal Land Bank District—B. F. Davis, Douglas, Wyo.

Berkeley, Cal., Federal Land Bank District—W. N. Howard, Los Angeles, Cal.; W. E. Heilmann, Willows, Cal.; George C. Kreutzner, Bakersfield, Cal.; Edwin Cox, San Francisco; J. L. Fox, Napa; A. W. Hendriek, Reno, Nev.; J. Sitton, Fallon, Nev.; and Guy D. Acuff, Phoenix, Arizona.

Spokane, Wash.—Another gas and oil company will drill for oil in the Benton country district. Oklahoma capitalists have taken a lease on the H. J. Shively ranch, owned by the Deming Ranch Co. Drilling will commence June 1, 1917.

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MEXICAN PETROLEUM CO.

O. D. Bennett, William H. Smith, T. A. O'Donnell and E. L Doheny, Jr, were re-elected to fill vacancies in the board of directors of the Mexican Petroleum Co. at the annual meeting of the stockholders in Los Angeles. The four are elected for terms of four years each.

Herbert G. Wylie, manager of production and transportation, informed the stockholders that by the end of the present year the company will be in possession of 250,000 tons of shipping service as compared to a total tonnage today of approximately 46,000 tons. The new ships will be secured by charter from the Pan-American Petroleum and Transport Company which is the largest stockholder in Mexican Petroleum.

With the added tonnage it is anticipated that the earnings of the Mexican Petroleum Co. will increase from three to five times, unless unforeseen circumstances should arise to upset the present plans of the company.

GENERAL PETROLEUM WILL INVADE MEXICO

The management of the General Petroleum Corporation has been advised from Mexico that the Carranza Government of the southern republic has granted permission to the Mexican Gulf Oil Company to begin drilling on the most valuable tract of land in the possession of the General Petroleum.

General Petroleum expects a large increase in income from the development of this tract, which is situated in the hinterland of Tampico.

General Carranza has given positive assurances to the United States that oil supplies from the Tampico fields and other Mexican sources will not be denied to the United States or Great Britain. Mexican oil is the principal fuel for British and French war vessels.

RAILROADS' LOSS DUE TO JITNEY

A loss of $3,000,000 for 1916 is assigned to the jitney busses by the electric railroads of the state, according to Manager W. V. Hill of the California Electric Railroad Association which held its annual meeting recently.

The average of earnings of the 27 California roads for 1914 and 1915 was $33,894,000, while for 1916 it was $31,599,000, a falling off of $2,295,000. The fact that this decrease is less than the estimated loss due to jitneys is explained, according to Hill, by expansion of business in some directions.

The revenues of the United Railroads fell off in the two years from $7,998,842 to $7,320,572, while the loss of the Los Angeles street railways is placed at $730,000, and that of the Pacific Electric interurban system in Southern California at $500,000. The Fresno Traction Company estimates a loss of $60,000 a year from the use of private automobiles, and the Petaluma and Santa Rosa Interurban, one of $8000.

President George K. Weeks, Manager W. V. Hill, and the executive committee, which includes with the two named Paul Shoup, Jesse W. Lilienthal, W. E. Dunn, W. R. Alberger and W. Clayton, were continued in office.

MAILS SUSPENDED

Mail service between the United States and Germany was suspended early in April by Postmaster General Burleson. The suspension will continue during the continuance of hostilities. Orders were sent to all postoffices to refuse to accept any mail destined for Germany and also for Austria-Hungary, Luxemburg, Bulgaria and Turkey, as such matter can not reach those countries except by passing through Germany. Mail addressed from the last named countries will be forwarded to destination.

The postmaster general also suspended the exchange of postal orders between the United States and the German Empire. International money order offices have been instructed accordingly. No further money orders will be allowed by them and they will decline to pay orders drawn upon them by German officers.

The Treasury statement of circulation April 1, 1917. showed a total of $4,702,130,941, and the high per capita of $45.34, a gain of over one dollar for the month.

Gold coin was $667,338,062, or not quite one-fifth of the gold available for coinage or for foreign credit. Gold certificates rose from $1,317,105,609 April 1, 1916, to $1,865,918,769 April 1, 1917. Gold coin and certificate circulation together amounted to $2,538,256,831.

Total money outstanding increased $784,649,997 for the year from April 1, 1916, of this sum $605,169,086, as is shown was entirely in "gold" money. The only other important increases were in reserve notes, $193,192,755, and subsidiary silver, $25,215,849, the latter indicative of the great activity of internal industry.

STATEMENT OF THE OWNERSHIP, AND MANAGEMENT Of California Derrick, published monthly at San Francisco, California for April 1, 1917. State of Cal, County of San Francisco, ss.

Before me, a notary public in and for the State and county aforesaid, personally appeared E. L. Mackey, who, having been duly sworn according to law, deposes and says that he is the manager of the California Derrick and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 443, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1That the names and addresses of the publisher, editor, managing editor, and business managers are: Publisher, California Derrick Publishing Company, 509 Sansome St., S. F., Editor, Clarence E. Edwords, 417, Montgomery Street, S. F., Business Manager E. L. Mackey, 509 Sansome Street, S. F.

2. That the owners are: (Give names and address of individual owners, or, if a corporation, give its name and the name and addresses of stockholders owning or holding 1 per cent or more of the total amount of stock.). E. L. Mackey, 509 Sansome Street, C. E. Edwords, 417 Mongomery St., S. F.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total sum of bonds, mortgages, or other securities are: (If there are none, so state.) NONE.

E. L. Mackey, Business Manager. . Sworn to and subscribed before me this 3rd day of April 1917, (SEAL) W. H. Pyburn, (My Commission expires June 8, 1920.)

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Thirty-seven Standard Oil Companies, showing eapitalization, dividends, officers, etc., together with a detailed deseription of the business of eaeh eompany, and the earnings during 1916.
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The wealth of statistieal information eontained in this booklet makes it the first of its kind ever published.

It should be of ineaIculable value to those interested in oil securities.

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CHAS. A. STONEHAM

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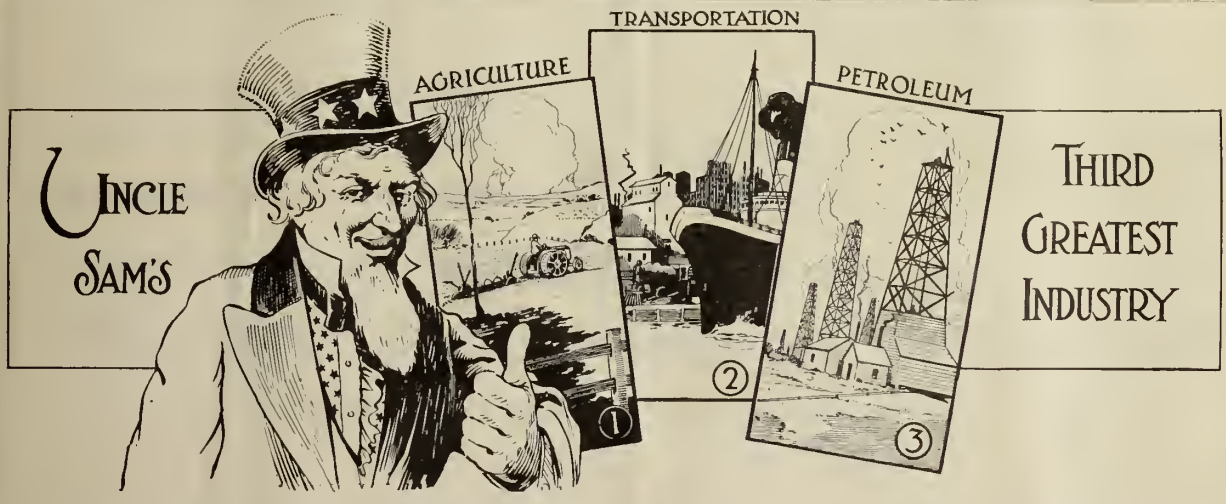
THE OIL AUTHORITY OF THE PACIFIC COAST

Vol. X SAN FRANCISCO, JUNE, 1917 No. 10



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Vol. X SAN FRANCISCO, JUNE, 1917 No. 10

War Taxes--Who Pays?

The Congress, stimulated by influences back of future political careers of most of the members thereof, is trying to find a way to get nearly two billion dollars out of the people this year for war taxes, without bearing down too hard on those who really ought to pay these taxes.

The subject of taxation is, at the best, complex. There are, primarily, two matters to receive consideration: First, the amount of money necessary to meet the demand, and, second, how this money shall be raised. These matters are simple. The answer to the first is a matter of arithmetic and the answer to the second is to levy taxes on the people.

It is the last answer that gives the congressmen worry and the people trouble, for in levying the tax on the people care must be taken to give no unnecessary cause for complaint to the class of men who furnish the sinews of political campaigns. If Congress can "get by" with the specious talk given out for public consumption and lead the "common people" to believe that they are not paying as much as they really ought to pay, there is no danger of the votes at election time, but financiers and men of large affairs, and, incidentally, large wealth, have a habit of scrutinizing very closely everything in the way of tax laws that may in any way effect their pocket books. Consequently in making out a tax schedule the Congress is compelled to exercise great care.

Just at present the income tax is giving most cause for worry. It would seem that when it comes to a tax on incomes the poor man—the man who receives barely sufficient for his work to sustain his family—would be left out of it, and the men who are surrounded with the luxuries of life, and who, by reason of their money and influence are in position to increase their riches because of the war, be made to bear this tax burden.

Otto H. Kahn, one of the big bankers of New York, is so well pleased with an article which he had printed in the New York Tribune, that he is flooding the country with it in pamphlet form. He enters a plea for the "well-to-do" and begins his talk with denial that moneyed men fomented America's entrance into the war from the motive and purpose of gain. He says: "There appears to prevail amongst not a few people the strange delusion that America's entrance into the war was fomented by moneyed men. * * * I am absolutely certain that no such hideous and dastardly calculation found lodgement in the brain of any American, rich or poor."

He may be, as he says, "absolutely certain," but there is no question that conditions gave grave warrant for the belief in the minds of the thinking public that our entrance into the war came from some cause that arose only after German submarine activity caused trouble with the shipment of supplies to the Entente Allies. It is, indeed, a "hideous and dastardly" calculation, but we have seen too much of the activities of men who accumulated vast wealth through war-time contracts, and who were sufficiently "hideous and dastardly" to send rotten food to soldiers, to send deteriorated medicine to soldiers, to hoard food from our babies and to sell ammunition that was defective, to believe that they have suddenly assumed the characteristics of angels.

Mr. Kahn makes this defense as a prelude for an argument against heavy taxes for the "well-to-do," as he terms them. Naturally he avoids such terms as "rich" or "wealthy" when he speaks of men who have incomes of from $100,000 to $1,000,000 a year. They are simply, according to Mr. Kahn, "Well-to-do."

He gives a veiled threat on behalf of these "well-to-do" people when he says that if they are to be taxed beyond a certain figure "capital will go into hiding" and "It might even take wings to other countries, for instance to the country at our very door, *Canada, where there is no federal income tax at all.*" (The italics are his.). Then he goes on to say that "Many thousands of workmen will be thrown out of employment. Many businesses and shops would close."

To sum up this specious plea for the purses of the "well-to-do" Kahn calls the idea of taxing the rich "license for the unsuccessful to despoil the successful."

In the ultimate analysis who really pays this income tax, whether it be the tax on the high incomes of the wealthy or the incomes of corporations and partnerships on excess profits? Is it not the consumer? Does not the poor man and poor woman who is compelled to make every cent go as far as possible in order to get on at all, ultimately pay the tax? It is as certain as that night follows day, for when the manufacturer, jobber wholesaler or retailer is compelled to pay out more money for taxes he takes it out of the next fellow and the consumer is at the tail end of the list.

That, however, is not all that must be borne by the person of moderate means. It is proposed to tax incomes as low as $800. Will any one who is advocating such a preposterous schedule please explain how a person with an income of $800 a year can live right under the present high cost of living? If a man with a family receives $100 a month he must, under the proposed schedule, pay income tax of $6 a year. In addition to that he is compelled to pay an increase in the cost of supplies for his family amounting to an average of 45 per cent above what he paid four years ago, with no concurrent increase of salary. This 45 per cent increase is his share of the income tax on the wealthy and excess profit tax on manufacturers.

Let us look things in the face and be not afraid of the truth about them. It is right that our country should have the sinews of war, for we have gone into the war and must see it through. But let us get out of the habit of trying to jolly the "common people" by telling them that the "rich pay the the taxes." There is not an American citizen in the whole country who is worthy the name that is not ready and willing to bear his share of the burden that has been thrust upon us. But there are quite a number who object to *bearing more than their share* and when representative men like Mr. Kahn of New York tries to coerce the government and the people by threats of "moving to Canada" he is apt to stir up trouble that will cost him and his associates many times what they will be called upon to pay in income or excess profit taxes.

When the question of taxing newspapers came up in Congress some facetious congressman said "newspapers can take care of themselves." That is more of a truism than the congressman believed, and at the same time all self-respecting newspapers will endeavor to show that they are as ready to "take care of" the people who read them and who look to them to protect their interests by being their mouthpieces.

It is because newspapers are the means of keeping the people informed that an attempt has been made to put a gag on free press, and not because it is feared that our newspapers will give information to the enemy. There is no more loyal institution in the United States than the Press. It is to the honor of the Hearst publications that the rights of the people have been preserved by the killing of this gag clause in the espionage bill, yet we are told that unless the press and especially the Hearst publications, are muzzled, our plans will be made public and our enemy will profit thereby. It is a matter of record that not a single American newspaper has printed a single item that should not have been printed about troop movements, ship movements, or government plans. Not a single item has appeared that has told what Germany was not already fully aware of and not a single item has appeared that in the slightest manner infringed upon the rights of our citizenship.

There are certain truths that should be told. It is the people's war and the people have a right to know how it is progressing. It is a people's pocket book from which the war fund is to come, and the people have a right to know how the money is secured and also how it is expended. If we are to be taxed out of proportion it is right for the people, whether they be "common people" or "well-to-do," to know who is responsible and why it is done. With a gag law on the Press we, the people, would be at the mercy of any official, petty or otherwise, and the people would hear only that which officialdom desired them to know.

We are having a sample of this sort of dissemination of news because of the gag law of England which prevents any news except that which is favorable to the Entente Allies from being sent out. We know nothing of what is going on "somewhere in France" except what England wants us to know, and as a result of this sort of censorship we as a nation are due for one of the surprises of the century when our army gets on the firing line.

If we believe the reports sent out by England we have reason to believe that every battlefield is encumbered with mounds of dead Germans and that none of the English or French were killed. Yet certain facts will filter through, and it is a well known fact that France alone has lost more soldiers than Germany; it is a known fact that one regiment of Canadians, consisting of 1200 men lost every man but twelve, and of these twelve eleven were so badly wounded as to be incapacitated. Why should we not be told the truth about these things? Is it going to make us refrain from fighting to know that people get killed in war?

If we are to be taxed to pay nearly $3,000,000,000 war taxes and then the additional taxes to take care of $7,000,000,000 war bonds, is it not right that we be told the truth about conditions over there where the fighting is going on?

"Liberty" Bonds and Coercion

The government is issuing $2,000,000,000 worth of bonds for the purpose of carrying on the war with Germany. It is calling on the people to make sacrifices in order to buy these bonds.

It is right that the bonds should be issued and sold and it is right that the people should be invited to show their patriotism by buying these bonds—if they can afford it.

The word "liberty" is one of the most abused words in our vocabulary. These bonds are called "liberty" bonds because we are supposed to be fighting to bring liberty to Germany.

Our people now have liberty and in the exercise of that liberty we are to buy bonds.

So far so good, but what of the method being pursued to have the people exercise their liberty in buying these bonds?

We have been told that employees in certain institutions have been coerced into buying these "liberty" bonds, through the implied threat of dismissal if they refused. We have been told that employees in municipal institutions have been given to understand that their positions are dependent upon their buying a bond. We have been told that a committee of estimable gentlemen, calling upon small storekeepers have gone so far as to call the storekeeper who refused to buy a "liberty" bond, a "traitor" and to threaten him with exposure.

We have been told these things so often that we believe them.

We do not believe that there is much liberty left to the individual under these conditions. If a small shopkeeper is struggling to get sufficient money to pay his rent he certainly knows whether he is able to take money out of his business to invest in a "liberty" bond.

We do not believe it increases the patriotism of any individual to be compelled to buy a "liberty" bond. We do believe that with proper knowledge of the necessity for the sale of these bonds the people will absorb them gladly. There are many people who will do something when requested but who will decline to be coerced into doing the same thing.

It is respectfully submitted that the committee who are trying to get the people to buy liberty bonds, try something besides coercion.

Country Needs Awakening

Because it believes speed in war activities is imperative and that the principal obstruction to speed is the failure of the American people to realize that they are at war, the Chamber of Commerce of the United States has asked its members to express by wire their opinion on a plan for a nation-wide campaign of information to be conducted by the government.

The plan which is to be presented to the president early next week, provides for the creation of a definite branch of the government whose job it will be to show the country, by means of advertising space in magazines and newspapers, posters, on billboards and the like, the magnitude of the task confronting it.

"The same fallacies that beset England," runs the appeal of the National Chamber, "are to be overcome in the United States. England, too, thought it would be a short war, six months at most. England, too, thought it would be a small job. England, too, thought there wasn't anything special for the individual to do, that the government would do the work."

It is felt that an urgent need exists for precisely the same kind of campaign of national education and information as that conducted by the English government when it came to the realization of what the war really meant. That campaign was immensely successful in arousing the entire people of England to an understanding of the war and to the obligation of personal service which it placed upon each individual citizen.

"Present conditions indicate clearly that a great crisis is approaching in the war situation," the appeal to the National Chamber membership goes on, "and that it is probable the united efforts of America on a prodigious scale will be called for in the very near future. This means that the people must be stirred to a sense of their individual responsibilities in order that their wholehearted cooperation may be secured. This spirit and this cooperation can be obtained simultaneously throughout the country by means of a properly directed national campaign of information under strong and intelligent headship."

Seven urgent matters, it is said, must be made clear to the people if we are to get that unified action which is necessary to hasten our war activity.

1. That the banks cannot take care of the bonds. The bonds must be bought by individuals.

2. That conscription does not carry with it anything of disgrace. It is as patriotic and much more effective than the mediaeval system of volunteering.

3. That labor must be readjusted on a large scale. It must be made more productive, and its varied problems carefully considered.

4. That food administration will necessarily be repressive, but is in the interest of all.

5. That there is a false and proper national economy. Business in war time is not "as usual."

6. That the intelligent cooperation of women in both direct and indirect branches of war effort is absolutely essential.

7. That there should be a centralized control for the systematic support of the families of those who go to war. This should be through the intelligent cooperation of the government, local organizations and employers.

"Aside from the question of shortening the war," the statement goes on, "there are life-and-death reasons why the United States should speed preparations for the great conflict. There are possible and even probable contingencies which might cause the United States to bear the brunt of the fighting on her own shores.

"If Russia should collapse.

"If the British fleet should be overcome.

"If the food situation should bring our allies to their knees.

"If great reversals should be met on the western front.

"If the submarine menace be not checked.

"The impossible has happened so often in this war that any one of these contingencies is not impossible. The Germans should have gotten through at the Marne and captured Paris and Calais, and established control over the Channel. The English fleet should have annihilated the German fleet at Jutland. The Central Powers should have been starved before the last harvest."

As explained by Elliott H. Goodwin, general secretary, the proposed campaign of education should be considered as absolutely apart from routine, press publicity matter and the ordinary output from the various departments of the government meant for publication in newspapers and periodicals. It should be a definite branch of the government, under the direction of the President, with a man at its head of broad practical experience in the use of the means of national education, with a capacity for organization.

The director in consultation with those who are shaping the main war program, would map out such government campaigns as might be thought desirable and through various channels at his disposal, would, by utilization of news and advertising columns, posters and the like, promulgate throughout every part of the country, simultaneously, the message which each campaign would be designed to impress upon the minds and the hearts of the people.

This work to be effective must be a branch of the government backed by the government, controlled by the government, and financed by the government, and on this basis it would not fail to impress people much more strongly than would be the case if similar efforts were put forth entirely by private organizations. At least, that has been found to be so in England and there is little doubt that it would prove to be so here.

Promoting a Crisis

The last issue of the "Standard Oil Bulletin" contains the following:

Between September 27, 1909, and July 2, 1910, the President of the United States withdrew all of the public lands of the west classified as petroleum land, and under these withdrawals and the act of Congress of June 25, 1910, the public domain was closed to mineral development or exploration of any kind for oil or gas. In addition Government suits for the cancellation of patents issued to the Southern Pacific Railroad have resulted in suspending the development of approximately 166,000 acres of land in the oil areas.

No provision has been made for either the sale or lease of any part of the oil-bearing lands of the public domain to prospectors, miners or locators. In one instance the experts of the Geologic Survey estimate an oil content in one of the naval reserves at 100,000,000 barrels. But the Government neither explores nor permits others to explore the lands within or without the reserves. The oil deposits in some three to four million acres of public lands are, and for seven years have been effectually, senselessly locked up.

It would seem that some great economic purpose must underlie this extraordinary condition, that the design is to create a need for the oil, that the production of oil is to be not only discouraged, but, if possible, prevented. As a matter of fact, the government's inaction is the result merely of a total ineptitude, and inability to legislate and an indifference to economic results. It is obvious that in the present emergency the oil lands of the United States should not only be open, but should be undergoing the most intensive development possible. The Department of the Interior and its sane chief recognize this. But Congress is apathetic. The Department of Justice is frankly hostile. How long, in view of the present crying needs, are our vast petroleum resources to continue in their present state of uselessness? It is stated that twenty billion tons of phosphate, of an estimated value of $90,000,000,000 at the mine, are now in public ownership on withdrawn land with no adequate law for development, and that 3,083,000 acres of land, with an estimated oil content of 750,900,000 barrels, are rendered practically idle. And yet a shortage of fuel oil exists today that threatens the efficiency of all Pacific Coast industries and transportation facilities. The railroads, our arteries, are practically without oil. To take oil from the copper mines, the smelters, the powder works, the acid works, or other industries so as to increase the railroad's supply would not help the economic condition. It would be but robbing Peter to pay Paul. The bald fact is that California is producing 265,000 barrels of crude oil a day, with a normal daily consumption of 300,000 barrels. We are running behind at the rate of 35,000 barrels each day. California oil stocks have decreased from 57,000,000 barrels on January 1, 1916, to 40,000,000 barrels on May 1, 1917. At the present rate of decline a comparatively short time will suffice to wipe out the present available fuel oil supply amounting to 25,000,000 barrels.

It is, of course, notorious that the bitter hostility of the departments of the Navy and Justice to the occupation of certain withdrawn lands has blocked all legislation concerning the petroleum lands of the United States.

But whether or not the oil men on unpatented lands have equities which the government should recognize; whether or not the Southern Pacific Railroad is justly or unjustly sued, the public aroused as it is at this time to the need for preparedness, cares not. It is a scandal that the efficiency of our railroads and our industries should be threatened because of a legal squabble between some producers and two departments of the government, that Congress should be prevented from legislating for the development of the withdrawn lands, and that now of all times, our immense petroleum resources should be barred from public usefulness, because three great departments of the government cannot agree on the form of legislation to be enacted to open these lands, or because two of those departments, those of the Navy and Justice, apparently desire no legislation at all. Will not the President see and remedy the situation?

The problem can be aggravated but not solved by litigation. In California the Government has filed over sixty suits against operators, affecting directly or indirectly over 22,000 acres of proven oil land. The first of these suits, started more than four years ago, has not yet been concluded in the trial court. But the effect has been that on March 1, 1917, on the unpatented lands in suit, covering approximately nineteen square miles, only six new wells were drilled, and only twelve new wells on sixteen square miles of proven but unpatented oil territory, not yet involved in the suit. Thus the direct result of seven years of the present policy of the government is that the development of one of the most productive oil fields in the world has practically ceased, in face of the most serious shortage and highest necessity for oil that we have ever known.

The needs of the Navy are not to be ignored for any consideration. But to protect the Navy it is unnecessary to destroy the usefulness of the entire oil area in the public domain. The Secretary of the Navy in 1916 estimated the entire consumption of the Navy on a war footing at about 14,000 barrels per day. Of this comparatively insignificant quantity only a small part would be required on the Pacific Coast. It is insignificant. One consumer on this Coast, the Southern Pacific Railroad, alone uses 40,000 barrels per day.

So far as the Standard Oil Company is concerned, it lays claim as lessee, to some 3340 acres of unpatented land. Its total daily production from unpatented lands in the Naval Reserve is 1000 barrels of oil, and from all unpatented lands is 2183 barrels. Its total daily production from all its sources is approximately 50,000 barrels. if all production from unpatented areas is halted by the government, only a small fraction of the production of the Standard Oil Company would be affected. The Company speaks from the broader aspect of a deep economic interest in a great industry, an industry whose very life is being sapped by a supine and wholly blind governmental course.

COMMITTEE BEGINS WORK

Professor David M. Folsom of the Stanford mining department has been appointed a member of the state committee on petroleum production by Governor Stephens. The committee has already begun an investigation of the oil condition of the state.

CONDITIONS ARE FAVORABLE

The Federal Reserve Bank of San Francisco reports in part as follows:

Credit is easy and conditions are generally favorable for the flotation of this district's share of government loans. With such huge financing, temporary dislocations of funds can hardly fail to appear here and there but the Secretary of the Treasury will deposit in member and non-member banks the proceeds of payments on Liberty Loan bonds, withdrawing the funds as needed. Banks generally have exceptionally heavy reserves, but rediscounting with the Federal Reserve Bank should unhesitatingly be availed of when required.

Both to extend its service and as a safeguard, it has been determined to establish branches of the Federal Reserve Bank at Seattle, Portland and Spokane.

The May 1 government report estimates the winter wheat crop for this district at 39,250,000 bushels against 53,330,000 last year and a five year average of 62,235,000. According to reports from the Spokane section, last fall was unfavorable for planting winter wheat and this spring has been so cold and backward that it has prevented planting a full acreage of spring wheat. Private estimates indicate a total crop perhaps 30 per cent below normal in amount.

The acreage in beans has been increased about 50 per cent over last year, that in California alone being estimated at 400,000 acres. Last year over 260,000 acres were in sugar beets. The acreage this year has been largely increased in Idaho and Utah. Last year Oregon and Washington produced about 10,000,000 bushels of corn. This year 190,000 acres have been planted, as compared with 121,000 last year. A recent survey in California shows the wheat crop about 90 per cent of normal, pasture grasses 75 per cent, rice 130 per cent and potatoes about normal.

A report from Idaho estimates that 120,000-acres in that state are planted in fruit, 115,000 acres being in apples. Prospects for deciduous fruits are for only moderate crops. Apricots and almonds have suffered from frost. Generally speaking, the increase of new acreage coming into bearing will to a considerable extent offset losses by frost.

Railroads are preparing to provide cars for large shipments of fruit from California, 15,000—18,000 being the estimate for deciduous fruit, 14,000-15,000 for Valencia oranges (2000 more than in any previous year) besides 10,000 for cantaloupes.

A large salmon catch is anticipated this year because of the quadrennial run of the sockeye and the biennial run of humpback varieties.

It is said that 315,000 head of sheep are grazing on the Humboldt National Forest in Nevada, the largest number on any single national forest, while the largest number of cattle, 76,000 head, is found on the Tonto in Arizona. Both cattle and sheep are commanding extraordinary prices, and wool contracts have been made at 50c to 52 1-2c.

The lumber output of this district during the past year has amounted to 9,070,000,000 feet, about 1,500,000,000 more than last year.

Pacific Coast banks, particularly those of San Francisco, are steadily expanding their acceptance business. From April 1 to May 15 the Federal Reserve Bank bought their acceptances covering the following importations: Rice from China and South America; beans, raw silk, pongee, curios, surgical instruments and buttons from Japan; rubber from Java; cocoanut oil, hemp, buttons, hats and cigars from the Philippines; tea, cotton goods, toys, walnuts, carpets and peanuts from China.

Loans and deposits of member banks in reserve cities in this district each expanded more than 25 per cent from May 1, 1916, to May 1, 1917.

The prospects at this time are for maximum industrial activity, but for only moderate crops, with generally high prices.

UNION PETROLEUM COMPANY OPENS KANSAS CITY WAREHOUSES AND OFFICES

Once again the Union Petroleum Company has passed another milestone in the phenomenal expansion of their business — adding to their chain of shipping stations a plant in the most strategic position for serving petroleum buyers of the great southwest.

This new branch embodies not only modern storage and shipping facilities, but also commodious offices in the center of Kansas City's great business district. The offices are situated on the sixth floor of the Republic Building — one of the city's most modern skyscrapers—are conveniently located to conserve the time of both local and out-of-town buyers.

Mr. J. H. Cook, a recognized expert on all that pertains to Petroleum, and well known to most large consumers of petroleum in the southwest will be in active charge.

The company, and its new Kansas City manager, extends an invitation to all members of the Oil Fraternity to make this office their headquarters when in Kansas City and profit by the facilities provided here for prompt and efficient handling of shipments throughout the great southwest.

ANGLO & LONDON PARIS NATIONAL BANK

Plans for a bank and office building are being prepared by the Anglo & London Paris National Bank for its big structure to be erected on the north line of Market Street opposite Second and adjoining the Hobart Building. The new building will extend through the block to Sutter street. It will cover most of the large irregularly shaped lot recently purchased for the bank as a site for the contemplated structure.

Although the first draft of plans is said to be tentative still enough is known about the project to warrant the statement that the building will be one of the foremost office structures of San Francisco.

BEGIN CONSTRUCTING OIL SETTLING BASIN

McKittrick—The Reward Oil Company is constructing a 700 barrel settling basin on its lease in the north end of the McKittrick field. The basin, which is to be cemented, will be completed within a short time. It is located in the immediate vicinity of the de-hydrating plant, which has a capacity of 2000 barrels per day.

California Derrick

The Oil Authority of the Pacific Coast

PUBLISHED MONTHLY
—BY—
The California Derrick Publishing Company
DR. CLARENCE E. EDWORDS .....Editor
E. L. MACKEY ..... Business Manager

OFFICES
509 Sansome Street, San Francisco, California
Telephone Sutter 2984
Editorial Rooms 417 Montgomery St., Room 422
Telephone Douglas 3617

Subscription price, per year, $2.00 Foreign $2.25
Advertising Rates on Application
Entered as second-class matter February 17, 1912, at the postoffice at San Francisco, Cal., under the Act of March 3, 1879.

THE DERRICK'S CREED

The California Derrick has no axe to grind, no company to promote, no stocks to sell, no "interests" to bow to. Not dominated by any company, but faithful to California's Oil Industry.

THE FOOD PROBLEM

With the appointment of Mr. Hoover as Food Dictator of the United States has come a condition that will be of vast future benefit to the United States as a nation and to the people as individuals.

As a nation and as individuals we are wasteful. We have always had so much of everything that we have felt under no necessity to conserve anything. We have wasted in hundreds of ways and have still had enough to spare.

It is a bad habit we have gotten into. A bad habit for the individual and then a bad habit as a nation. With the strict conservation of food under the direction of Mr. Hoover we are going to learn something that we should have known all the time. We are going to learn how to live right. We are going to learn that economy in its truest sense is the fullest use of everything. We are going to learn that when we boast of being "wasteful" because we think it enhances our importance, we are really telling just what kind of a fool we are. We are going to learn that saving does not necessarily mean miserliness nor niggardliness.

One need but read some of the reports that are being sent out from the various departments at Washington to understand that a little individual saving will mean wealth for the nation. Take, for instance, the item recently sent out relating to the saving of butter. If every one of the 20,000,000 households of America were to save a quarter ounce of butter daily there would be a saving of 114,062,500 pounds a year, the product of more than half a million cows.

If only one household in every hundred wastes one-fourth of an ounce of butter a day it means a loss of 1,000,000 pounds a year.

If one cared to go into this sort of statistics it is easy to see where we could be lead by making similar calculations regarding other food products. It is a safe estimate that there is at least a quarter of an ounce of fat wasted in each of the 20,000,000 households of America every day, making a total of 114,000,000 pounds during the year. Over in Germany, France and England they are moving Heaven and earth to get fats or fat substitutes, and unless we begin to see the necessity of conserving ours we shall be in the same position before this war is over.

What is true of butter and of fats is true of everything we eat. Let us learn true economy by looking for leaks and waste.

LIBERTY BOND CONVERSION PRIVILEGE

Many who contemplate purchasing bonds of the Liberty Loan have been making inquiries so that they may get a good understanding of the convertible feature of this loan. Secretary McAdoo, in making the offering, announced that should there be a new loan offered, which would bear a higher rate of interest than that nominated in the Liberty Loan, then those who possess Liberty Loan bonds are to have the privilege of converting them into the bonds of the new loan. How this is to be done is a detail, but those who thoroughly understand the proposition, say that should all of the Liberty Loan bonds be converted into 4-per cent bonds (and very likely almost all of them will) should such a loan be offered, then the total debt represented by the new loan, exclusive of any third loan that may be offered, will be $4,000,000,000.

Some have suggested that the 3 1-2 per cent bonds when converted be called the "Windoms," because it is thought likely that Secretary McAdoo may deem it the best and simplest plan simply to stamp the 3 1-2 per cent bonds and the coupons with the statement that thereafter they will bear 4 per cent interest. It was in this way that William Windom, when Secretary of the Treasury in President Garfield's administration, converted bonds. Thereafter these bonds were called "Windoms."

A SANE THOUGHT

The Mechanics and Metals National Bank of New York, in its recent monthly letter touches upon the matter of withdrawing enormous amounts of money from business because of war taxes and bonds, in the following pertinent ideas:

"It is necessary that we should take and write soberly about what is before us. We are on the threshold of events that may, conceivably, impose stern duties. It is not wise to view our entrance into the war as so many people are inclined to view it, namely, in a spirit of easy optimism, and with confidence that our great wealth will permit us to assume every financial responsibility without difficulty and without dislocating the existing relation of things. Such a view holds a two-fold danger; it checks a full preparation for eventualities—ignorance of a thing never can vivify the imagination—and it makes eventual adjustments the harder to bear.

"The economic wealth of the United States, consisting of the sum total of material and tangible goods on which it is possible to place a money value, is more than 200 billion dollars. It far exceeds the combined wealth of any two other nations of the world. War loans made abroad since the outbreak of the present conflict have amounted to one-fifth of Europe's economic wealth; by way of comparison, it might be said that it would take borrowing to the amount of 40 billion to place the United States on a parity with the nations of Europe. The United States is well prepared to sustain a drain on its

resources, but to suggest that billions of dollars representing the savings of millions of people, can be immediately diverted from the channels where they are now employed, and to suggest further that this can be done without causing a financial ripple, is parallel to suggesting that a great number of men be taken from productive pursuits the nation over, and turned into soldiers without interfering with industrial activity. You cannot afford to withdraw from business a million adults, all so fit for productive enterprise that they pass the strictest health test, without causing readjustment somewhere: you cannot withdraw large sums from the country's funds even for a short space of time, without necessitating important readjustment somewhere."

MEXICO'S NEW OIL TAX

The terms of Mexico's new oil taxation decree, which went into effect May 1, show the increasing control being exercised over foreign companies by the Mexican government. After setting forth that because of the development of the oil industry in Mexico in recent years production of petroleum must become a fount of income for the Federal Treasury, and exempting from the tax such petroleum as is consumed within the country, Carranza issues the decree of which the following is a synopsis:

Fuel petroleum shall pay 10 per cent per net ton ad valorem; this value shall be considered for fuel oil, of 0.91 density at $9.50. The value of the ton of fuel oil shall diminish twenty cents for each increase of one hundredth density, including in this variation the petroleum whose density may be 0.97.

The value of fuel oil, whose density may be less than 0.91, shall increase for each hundredth which it may diminish in density, the sum of forty cents.

The price of $7.50 per ton is assigned per ton to all petroleum whose density may be greater than 0.97.

Crude petroleum shall pay 10 per cent per net ton ad valorem; said value shall be considered as $14 for oils of 0.91 density, diminishing in the same manner that fuel oil, up to a density of 0.97.

Fuel oil for the use of tug boats and tank steamers employed in exportation shall be subject to preceding tariff.

The products derived from refining crude petroleum and the utilization of gas from the wells not to be consumed in the country, shall pay as follows:

Refined gasoline, half of one cent per litre.
Crude gasoline, one cent per litre.
Crude kerosene, half of one cent per litre.
Refined kerosene, one-quarter of one cent per litre.
Lubricant, one-quarter of one cent per litre.
Asphalt, $1.50 per ton.
Gas, 5 per cent ad valorem.

Crude petroleum and its derivatives when wasted in any quantity, either through carelessness or lack of compliance with legal provisions, shall pay a double tax from that corresponding to similar products.

All taxes shall be paid in national gold.

While Congress is trying to raise money to meet emergencies, would it not be wise for it to cut out junket trips of members? For instance the bill that provides for a commission to visit foreign countries to learn about labor conditions which gives a salary to each commissioner of $2500 with expenses, totalling $50,000 might be a good place to start.

LOAN LIMIT FOR BANKS

In subscribing to the Liberty Loan National banks will not be confined to the restriction of 10 per cent of capital and surplus, as obtains with all other individual loans. The United States Government, or any other government, in fact, is not a "person, corporation or firm," as defined in the statute. This question came up in regard to the Anglo-French loan, and was so determined. A bank can therefore, subscribe to the Liberty Loan, on its own account, as much as its resources will allow.

DEMAND FOR OIL INCREASES

The submarine, the aeroplane, the modern warship, the pleasure automobile, the motor truck and the oncoming farm tractor are all possibilities from petroleum development.

War is a tremendous consumer of oil and gasoline and is drawing down the stocks of oil above ground throughout the world. War's demand has doubled the retail price of gasoline this side of the water, and multiplied it three and four-fold on the other side, where it is permitted to be used in peaceful pursuits only to a limited extent and under government regulation.

In England no oil is permitted to allay the dust on the highways. If you have official business you are permitted a limited amount of gasoline at 75 cents per gallon. It should thus be measurably clear that industrial development from oil is held back by the war. The world has use outside the war area for all the oil that can be produced and transported for a long time after the arrival of peace.

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We place at the disposal of banks and bankers our constantly increasing list of domestic and foreign correspondents, and forty-seven years of successful banking experience

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THE FIRST NATIONAL BANK OF SAN FRANCISCO

Capital and Surplus, $4,500,000

In The Oil Fields

Coalinga—W. A. Cayanaugh, superintendent of the Spinks Crude Oil Co. on sec. 12, 20-14, in the west side field is making a splendid producer out of his company's No. 1-E well. The lumber and rig irons for the new No. 8 well are already on the ground and actual work will begin within the course of a few days.

The Kern Trading & Oil Co. on section 35 has started three locations on the north line. Grading has been completed, and the lumber and material for the erection of the rigs is on the ground.

The Coalinga-Mohawk Oil Co. on section 12, 20-15, under the supervision of M. L. Boles, has commenced the erection of a new rig preparatory to drilling another well. The new rig is located between wells 1 and 5. The No. 3 well drilled years ago, which has been idle, is seeking work on it in an endeavor to get a producer. This well is in the southwest quarter of the section.

The General Petroleum on section 2, 19-15, under the management of Harvey Anderson, is doing considerable work in the northern part of the field. Drilling of another well has started and other improvements have been arranged for.

Well No. 12 of the Maine State Oil Co., on section 31, 19-15, has been completed, the hole carried to a depth of 1862 feet with 8 1-4 inch casing. The daily yield will go about 40 barrels and the gravity of the oil is a little better than 19 degrees Baume.

The Zier Oil Co., on section 1, 20-14, is redrilling No. 17 well. Thus far the 8 1-3 inch casing has been taken down to 636 feet. The crew is rigging up for the redrilling of No. 18 well a short distance away.

The Kern Trading & Oil Co., on section 35, 19-15, have rigged up and are now ready for the rotary to begin work. Well No. 38 was spudded in a few days ago.

Good oil properties that can be purchased are at a premium at the present time. In each field many tracts have exchanged ownership. Should sufficient casing and material be purchased it is safe to say that much more gravity in this line would result. Since the first of the year in the Coalinga field alone at least fifteen transfers have taken place, the amount of which will total into the million mark. The Associated has purchased several valuable properties; the Valley, Coalinga Pacific, four tracts in section 2, 21-14; acreage in section 12, 19-15, and several other tracts have been turned. Each company under contract to the various marketing concerns can be considered about evenly for the average price of oil received is about the same. Wildcatting wells are not numerous as yet, although conditions would seem to justify prospecting, but with the shortage, and material hard to secure, operators are spending all their energy and time with the proven areas where results can be looked forward to ahead of time.

Considerable deepening and redrilling work is being done by the companies in this field to bring in, if possible, a better production on the suspended or idle producers.

The Coalinga Star Co., on section 12, 20-14, is redrilling two wells.

Superintendent S. J. Hardison of the Nevada Petroleum has crews at work on section 18,20-15, and 30, 20-15, deepening a well in each section.

The Premier Oil Co. property, the S. W. & B. Associated, K. T. & O., and the Zier Oil companies are also active in redrilling.

The Pine Ridge Petroleum Co., has incorporated; capital, $50,000. C. J. Compton and other local members of the American Petroleum Co., are directors. The company will operate in the local fields.

McKittrick—The Associated Oil Co. has advanced the wages of engineers at compressor stations, well crews, and daylight men 25 cents per day in the McKittrick Division. An increase of 50 cents per day was made about three months ago.

Information has been received from San Luis Obispo that oil has been struck in one of the Doheny wells at Pizmo Beach and that the well will at an early date be placed on the beam. This is the well in which slight indications of the presence of petroleum were found recently.

Well No. 5 in the new camp of the East Puente Oil Co. in the north end of the McKittrick field has been finished at a depth of 1225 feet and will within the next few days be put on the beam.

B. B. and E. R. Dudley, who are conducting extensive operations in the Lost Hills and other districts, are deepening two wells in the Lost Hills field. One of them is in section 3, 26-20 and the other in section 13, 26-20.

The Barnesdale-Yancey-Drake interests have abandoned well No. 1 in sec. 32, 29-22, in the North McKittrick front.

The California Star Oil Company, which has numerous wells in the Lost Hills field, is to drill a new one in section 24, 26-20.

The Belridge Oil Company is testing water shut off in two wells in section 35, 27-20, in the North Belridge district.

The General Petroleum Corporation is making a test in two holes in section 2, 29-21, and in one on section 11, 29-21.

The Marine Oil Company is making a similar test in a well on section 3, 29-21.

The Standard Oil Company in section 6, 30-22; and the United Western Oil Company in section 26, 29-21.

Well No. 15 on the property of the Berry and Keller Oil Co., in the McKitrick district, having been redrilled is now producing fifty barrels per day, making a substantial increase.

Test wells Nos. 1 and 2 of the Standard Oil Co., in section 16, 30-22, known locally as the Spreckels lease, in the immediate vicinity of the city, northeast, are reported to be drilling for deeper sands. Indications are understood to be quite promising, but in the event a return is made to the top sand at 1000 feet it is believed they will prove to be fair shallow holes, with oil of good quality.

It is rumored that a new well, being drilled by the Standard Oil Co. on a lease near the old Mahaska prop-

Patented and Unincumbered Oil Lands For Sale

165 acres in the Parkfield District, Monterey Co., close to drilling operations. Water well on this property shows signs of oil.

Frank La Vine, 230 West 1st Street
Los Angeles, California.

erty and very close to the State Consolidated Oil Co., on the North McKittrick front gives good evidence of the presence of petroleum. The well lies close to the foothills, and will in a few days be put upon the beam.

The erection of a new rig on the lease of the Kern Trading and Oil Co., adjoining that of the East Puente Oil Co., in the north end of the McKittrick field, will soon add to the activity of that portion of the district.

The Marina Oil Co., in keeping with the policy inaugurated upon its entrance into the Belridge field, has made rapid advances in development work within the past few months, and this week started three wells in section 3, 29-21. This section is now one of the busiest on the west side, the Marion company having one month ago commenced drilling eight new wells here, these having been preceded by three in March, six in February and four in January, while three were sunk in December, making a total of 27 for six months. Some of these have proved to be good producers, yielding as much as 100 barrels per day, and at shallow depth, this ranging less than 900 and 1000 feet. So successful has the company been in its explorations that the number of wells is to be increased as fast as material can be obtained.

The Standard Oil Co., which is continuing its activities on the North McKittrick front with the promise of good results in wells now drilling close to McKittrick and in the Belridge field, has just begun to drill five new wells in the Midway district, four being in section 16, 32-24.

Contracts of rig timber, pipe and other well supplies sufficient for the drilling of many new wells on the properties of the General Petroleum Corporation in the Belridge and Lost Hills fields, have been placed, and shipments are coming to McKittrick almost daily over the Southern Pacific Railroad. The General Petroleum, which in addition to various tracts of land secured several years ago, recently took over the holdings of the Lost Hills Development Co., intends, it is understood, to sink more than three score holes in the Belridge and Lost Hills territory, where the company, one of the leaders in West Side development, has a very large output. Several trucks are kept busy these days transporting material from the railroad yards to their respective destinations reminding old-timers of the eventful days of 1910 and 1911, when the McKittrick field reached its high mark in production—more than 5,000,000 barrels in 12 months.

The Standard Oil Co.'s well in section 8, 30-22, which was spudded in months ago, has reached a depth of more than 1000 feet and drilling is progressing with good indications. Owing to water trouble drilling was delayed for quite a while, but the discovery of oil of very heavy gravity was made. The drill is being sent farther down in the hope of striking a second sand, one of lighter gravity. This well is situated near the Olig station of the Producers' Transportation Co., two miles north of McKittrick, and the nearest holes in the territory are the two now being drilled on the Spreckels lease of the Standard in section 16, 30-22.

On the old Cousins lease in the McKittrick field the work of cleaning out wells is going on at a brisk rate. One of the wells has been put on the beam, and in the event results prove satisfactory with the three on the lease, the lessees will drill more holes. The Cousins property, which adjoins that of the McKittrick Oil Co. has been idle for several years.

The Security Oil Co., operating property in the Lost Hills field, where it has been doing considerable de-

Motor oil made from asphalt-base crude gives best lubrication with least carbon. Such is the testimony of motorists and experts alike. As Lieut. Bryan, U.S. N., puts it: "Oils made from the asphalt-base crudes have shown themselves to be much better adapted to motor cylinders, as far as their carbon-forming proclivities are concerned, than are paraffine-base Pennsylvania oils." Zerolene is scientifically refined from selected California crude—asphalt-base—not only made from the right crude but made right. Dealers everywhere and at service stations and agencies of the Standard Oil Company.

ZEROLENE
the Standard Oil for Motor Cars

velopment for some time, is starting two new wells in section 24, 26-20.

The Marina Oil Co. now at work on several new oil wells on its lease in the Belridge district, is adding another to its list in section 3, 29-21. The number of this hole is 51, and preparations are being made for sinking more on the property at an early day.

San Juan District—Prospecting in the San Juan district is going slowly owing to obstacles put in the way of the Cedar Spring Syndicate and owing to shortage of casing at the well of the Co-Operative Oil Land Subdivision Company.

A well has been started on the west side of the hills, south of the Sacramento ranch, near Shandon, but indications are that it is for real estate rather than oil purposes.

No new operations are reported on part of the big companies, owing to the difficulty of proceeding with prospecting work. The shortage of casing will hold back this district for some months.

OIL NOTES

Fullerton, Cal.—The Santa Fe Oil Company expects to start two new mills in the near future.

Lake View Annex Oil Co., Los Angeles, has incorporated: $2,000,000. Chas. E. Off, R. D. Wade, Geo. S. Safford, E. S. Shattuck, W. J. Nimmo, F. E. Dunlap and A. L. Parsons, all of Los Angeles. Los Angeles is the principal place of business.

Redrock Oil & Gas Company, Phoenix, Ariz., has incorporated: $10,000,000. Daniel V. Gardner, Thos. J. Wallace and Maude H. Teller.

San Fernando—Messrs. Geo. B. Edwards and Chas. A. Cole have obtained leases on the Rinaldo ranch and will begin drilling operations immediately upon a well on the Gregor property south of the town of Clay, 12 miles northeast of Galt. A. W. Snyder, an oil expert, will be in charge.

HIGH GRAVITY OIL FOUND

The Shell Oil Co. has struck oil which tests 63 gravity in its No. 1 well in the Ventura field. This is the highest grade ever encountered in any field in California, and was struck at a depth of 2200 feet. The amount of oil the well is capable of producing has not been ascertained, but it is probable that the oil is in a small pocket and will not be produced in any large quantity.

In a well a short distance from the Shell well the State Consolidated has a well which produces 52 gravity oil but it comes up through a large stratum of water and loses a portion of its light consistency in the pumping process. The production of the State Consolidated well is about 10 barrels per day. The Shell well was brought in under control. The oil, of 63 gravity, is perhaps the highest ever found in the world and certainly the highest in the history of the California field.

CASING SCARCITY DELAYS DRILLING

From reports the mid-continent and eastern fields are in the same fix for material as the California fields, being unable to secure enough to carry on drilling in any progressive degree. Several days ago, one of the large supply houses in this place shipped three carloads of casing to the mid-continent localities for immediate use. It happened though that this size shipped was not in use here. A large number of the smallest producing wells have been abandoned and the casing pulled to be used in new drilling.

AGENCY MEMBERS SIGN AGREEMENT

Members of the Independent Oil Producers' Agency are coming forward to sign the new agreement between the organization and the Union Oil Co., whereby producers will receive the price paid by the Standard for oil at the wells. It is understood that only eleven out of the 165 member companies have thus far refused to sign the new agreement. Under the new agreement the Union's contract with the Agency, under which it markets the production of the associated independents, is extended five years from January 1, 1917.

CRUDE OIL AGAIN ADVANCED

Effective June 7, 1917, in all fields all grades of crude oil advanced 10 cents per barrel over prices announced May 11, 1917. Quotations now are:

14 deg. to and including 17.9 deg., 88c per barrel.

18 deg. to and including 18.9 deg. 89c per barrel.

For each increase in gravity of one full deg. above 18.0 deg. up to and inclusive of 24.9 deg. one cent per barrel additional.

25 deg. to an dincluding 25.9 deg. 97c per barrel and for each increase of one deg. up to and inclusive of 36.9 deg. two cents per barrel additional.

37 deg. to and including 37.9 deg. $1.22 per barrel, and for each increase of one full degree above 37 deg. three cents per barrel.

Back East Excursions

Sale Dates:

June 16, 17, 26, 27, 30.
July 1, 2, 16, 17, 25, 26, 31.
August 1, 14, 15, 28, 29.
September 4, 5.

SOME FARES
(Direct Routes)

Denver, Pueblo,	$ 62.50
Omaha, Kansas City,	67.50
Dallas, Houston, San Antonio	70.00
New Orleans, Memphis, St. Louis	77.50
Chicago	80.00
Minneapolis, St. Paul,	116.00
Washington, D. C., Baltimore	116.00
New York, Philadelphia,	118.20
Boston	120.20

Proportionately low fares to many other points.

Going Limit—15 days; Return Limit—3 months from date of sale (but not latter than October 31.)

STOPOVERS: Going east of California state line; Returning—at all points. See Agents.

SOUTHERN PACIFIC

Write for Folder on the Apache Trail of Arizona

BIG DEVELOPMENT IN WYOMING

Rapid development of Wyoming's high-grade oil resources has become all the more necessary because of continued big gasoline demand and falling off in high-grade oil production in other fields. Already much has been accomplished in Wyoming. Activity now is on a greater scale than ever before there, notwithstanding shortage in oil field supplies and adverse weather conditions in the last few months. Ownership of Wyoming fields by Standard Oil interests who have been able to direct supplies from eastern fields has done much to get activity under way.

Entrance of Standard Oil into Wyoming through the Ohio Oil Co., Standard Oil Co. of Indiana and Imperial Oil Co. of Canada, interest (who have acquired control of the Midwest Refining Co.) has greatly hastened industrial expansion in the midwest state.

While much has been accomplished by these and other interests in the actual development work the bulge of credit for making Wyoming a factor in the oil industry is due to John B. Kendrick, former governor and now United States Senator from that state. At the outset of development of the oil industry in Wyoming Governor Kendrick announced a policy, which he strictly maintained and which he so firmly established that it is being continued.

It was known twenty-five years ago that there was oil in Wyoming, but it was not until a few years ago that the development of the fields was undertaken on a large scale. A French syndicate was among the original developers. This syndicate acquired large holdings and its early activity centered in Salt Creek field, where its property this year will produce 2,000,000 barrels of crude. The syndicate still retains the underlying interest in a part of the field operated by the Midwest Refining Company. The French people also have entered the Big Muddy field, where they will develop leases. They are also going into the Oregon Basin fields.

The Midwest Refining Co. is the notable success in the Wyoming fields. In the space of three years, it has become the fourth largest manufacturer of gasoline in the country. Its plants at Casper and Greybull will have a capacity of 50,000 barrels a day, when present plans are completed. Their operation has been unusually profitable because of the high gasoline content of Wyoming crude, some of it running as high as 45 per cent gasoline.

A production of 12,000,000 to 15,000,000 bbls. is indicated in Wyoming this year. It was about half that last year, and only a few million barrels in 1915. It is probable it will be close to 25,000,000 in 1918. Whatever it will be Wyoming's oil industry is a growing factor.

OIL YIELD INCREASES

Figures prepared and made public by the statistical bureau of the Independent Oil Producers agency indicate that stocks of California petroleum were reduced during the first four months of the present year by 4,814,864 barrels, a daily average of 40,124. This record compares with a daily average reduction during the year 1916 of 33,800 barrels.

Statistics for the month of April indicate that the California oil fields produced a total of 8,077,402 barrels, a daily average of 269,247, or 6331 barrels a day more than was produced in March, and 7500 barrels daily greater than the daily average recorded for the first quarter of the year.

April shipments amounted to 8,907,847 barrels, a daily average of 296,928 barrels, compared to daily average shipments in March of 302,015, showing a change of 5087 barrels daily. The April record compared with the daily average of 285,789 barrels for the year 1916, or an increase of 11,139 daily over that period. The year 1916 was a record one in the point of shipments.

Stocks of petroleum at the wells and in the pipeline systems on May 1, are recorded at 38, 825,430 barrels against 39,656,875 barrels on April 1, or a decrease in April of 930,445 barrels. Stocks on January 1, 1917, totaled 43,640,294 barrels.

DOHENEY NEGOTIATING FOR PIRU RANCH

With E. L. Doheney, oil magnate of Los Angeles, as the purchaser a large deal is in process of consummation for the purchase of the 13,000-acre tract of the Piru Oil and Land Co., formerly known as the Cook ranch in Ventura county.

For some time Doheney has held an option on this land. It is understood that the transaction has lately been closed, and the final papers will probably be signed upon Doheny's return from New York, where he is at present. The consideration is variously reported at $250,000 to $300,000.

The Piru Oil & Land Co. has engaged in developing of oil on the ranch, and the less mountainous portions have been given over to agriculture.

PINAL DOME PROPERTY SOLD

Involving more than $3,000,000, the sale of the property of the Pinal-Dome Oil Co., to the Union Oil Co. is announced. The transaction is one of the biggest concluded in the San Louis Obispo district for years.

The transfer includes much producing property, refinery at Betteravia, pipe line of nearly seven miles, compressor plant for making gasoline from natural gas and several marketing stations in and around Los Angeles.

The new owners will continue operations along the lines previously followed.

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WYOMING OIL PRODUCTION

In 1911 the State of Wyoming is credited with a production of only 186,695 barrels. In the following year, however, the output increased to 1,527,000 barrels, since which time production, in barrels, has been as follows:

1913	2,406,522
1914	4,360,000
1915	5,164,737
1916	8,030,000
1917 (present rate)	15,000,000

NEW TYPE OF OIL REFINERY

San Luis Obispo.—Work on the first unit of the new Southern Pacific heating plant for refining Casmalia Oil will be finished in less than two weeks.

The heating plant consists of two units, each including an underground tank with a capacity of eight carloads of oil. This is the first plant of the kind to be built. It is designed especially to refine, by heating, the heavy, low-grade oil produced at Casmalia, so that it can be burned in locomotives.

Experiments have proved the oil will burn as well as any other if it is kept at a temperature of about 150 degrees Fahrenheit. As the cost of Casmalia oil is about a third of that demanded for higher grades, the refining plant here is expected to effect a great saving.

The plant is being installed at a cost of approximately $25,000. Following its completion, a similar plant is to be built at Santa Barbara and another in the northern part of the state.

NEED MORE PIPE LINES

The Mexican oil fields can supply 500,000 barrels of crude oil a day is the claim of Edward L. Doheny, president of the Mexican Petroleum Oil Co.

Referring to the building of more ships, Mr. Doheny is quoted as saying that the major portion of the new vessels are to ply mainly between the Atlantic Coast of America and Europe.

"On the eastern seaboard," Mr. Doheny said, "there is no difficulty about fuel oil. Mexico is now supplying 2,500,000 barrels and can readily provide 500,000 barrels a day and more.

"To obtain the maximum, some pipe lines would have to be built and plenty of tank steamers provided, but the oil is there, and the means of getting it out could be readily secured.

"My own companies are now pumping into Tampico about 500,000 barrels a day, but if we built more pipe lines we could pump 100,000 or more with perfect ease."

MEXICAN OIL PRODUCTION

According to news noted from the Mexican News Bureau at Washington, the production of crude oil in Mexico during 1916 amounted to 40,550,469 barrels. The production for 1900 was 18,000 barrels; 1905, 650,000 barrels.; 1910, 3,500,000 barrels; 1911, 14,500,000 barrels; 1913, 15,575,000 barrels; 1914, 26,325,000 barrels; and in 1915, 38,653,000 barrels.

GUSHER IS FOUND

Bakersfield, June 2.—A 15,000 barrel gusher was brought in today on the Kern Trading and Oil property, section 7, 32-24, near Taft. The oil goes to the Southern Pacific Co. This is the biggest oil well to be brought in the Midway field in more than a year.

FROM THE MINING BUREAU

The threatened shortage of oil in California is an important question at present, and it is of more than passing interest to note that private interests have regularly supplied the public with accurate information.

The State Mining Bureau, incident to its work of supervising drilling operations so as to protect the fields from damage by water, has just compiled the enumeration of the amount of oil produced during 1916. The figures are based on sworn statements from all producers and show a total of 87,063,195 barrels, which is not greatly different from the amount produced in 1915, notwithstanding the fact that drilling activity increased the number of producing wells by 464 and added 6317 acres to the area of proven oil land.

The addition to the proved oil land area was principally in Santa Barbara county in the vicinity of Casmalia and at the Bell ranch, near Santa Maria.

The amount of crude oil stored in California is only about two-thirds the amount on hand two years ago. This condition exists in defiance of the fact that there are now more wells producing than at any previous time, and new wells are being drilled at a rate seldom exceeded in the past. Such a condition is worthy of the most serious consideration at the present time, in view of the dependence of many of our industries upon fuel oil.

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Vol. X SAN FRANCISCO, JULY, 1917 No. 11

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Vol. X SAN FRANCISCO, JULY, 1917 No. 11

Mobilizing California Oil For War

Now that the United States has entered the world conflict the business of taking an inventory of resources is necessary. Each state thus far is working independently, but it will not be long until the Federal government will be asking for an accounting from California.

California holds a most unique position. The two most essential articles needed either in peace or war are to be found here in abundance. Both are found in vast quantities but to get the maximum output of each will require the aid of every man, woman and child. These articles are food supplies and petroleum.

An inventory has already been started and statistics of the petroleum industry and its resources will be completed before our troops start for France.

It is impossible to tell how deep our coffers will be drained of this most important resource. They are none too full now, but with careful nursing of the industry and care of the product we can yield more than we require for our own necessities. One of the Cabinet officials gave out the statement that the government is preparing for a campaign of at least two years, and on this remark we must now base our figures and possibilities. We cannot even guess the increased demand that will come of the war.

California's oil industry is now at a disadvantage due to a daily shortage of some 40,000 barrels. To regain this and get even with demand we must double the present development work in the field. Yet here, again, comes difficulty. Instead of increasing development work it is being lessened because the war has drained the country of iron. Without iron we cannot get casing and without casing we cannot sink oil wells.

Fortunately the oil industry is receiving the attention of experts, seeking to find a remedy and mobilize every department. These experts are now at work and data is being compiled. Requests are made to every producer, gasoline plant, refining plant, topping plant, transporter and railroad for exact statement of what they are capable of doing. Location, capacity and facilities of every idle plant is being taken into consideration, and estimates are being made regarding the length of time it will take to bring them into activity.

Getting down to figures a review of the industry for the past year or so is necessary to grasp what is needed and what has taken place. Looking at the figures for the first quarter of 1915, 1916, 1917 we notice that for the first named year seventy six wells were completed with a daily yield of 21,800 barrels. Storage on hand represented some 60,000,000 barrels, there being a surplus each day of about 20,000 barrels. For the first quarter of 1916 the number of finished wells totalled 125, with a daily production of 23,315. Still there was a surplus, but the storage was soon to decrease.

For the first three months of this year the figures show that 170 wells were completed, with a production of less than that of the seventy six wells completed during the same period of 1915.

The daily average increase is now a few hundred barrels over the previous two years but the consumption and shipments have increased enormously until now the storage supply is being depleted at the rate of 40,000 barrels a day. The completion of wells has been greater than at any other time in the history of the industry, but to offset this daily average shortage by development work more than twice as many wells have to be drilled with a daily yield per well of the same amount.

Latest figures on storage of oil in California show that approximately 38,000,000 barrels are on hand. Statements of experienced men are to the effect that at least twenty five per cent of this amount can be stricken off. Sumps contain a vast quantity, and merely estimates of oil therein can be made. Every operator will guess a different amount, and when it comes to the recovery of this fluid a portion of it is bound to be lost.

The monthly shortage is not far short of one and a half million barrels, and the figures have been increasing for months, so that the available supply, by book figures, cannot last our consumption more than one year at most, some experts say six months.

Already eastern companies have stopped shipment in bulk to foreign ports. It is expected that the marketing companies in this state will do the same, and with these shipments curtailed the supply will last much longer.

At least ten tankers are in course of construction on the Pacific Coast. This fleet will carry in the neighborhood of 2,500,000 barrels at each sailing. The transportation companies on the tide water have their storage reservoirs filled, many of these concerns being unable to ship owing to lack of tonnage. California is better

supplied with pipe lines, and all of them run to the coast.

There are approximately thirty five refineries in the state, but the capacity cannot be secured with accuracy as some of the companies decline to give out their figures.

For case goods California can meet any demand at present, the capabilities of the larger plants for lubricating oils and gasoline being much greater than required for present demand.

Increased gravity of the situation is seen by the senate at Washington, and at a recent session that body was told by Francis S. Peabody, chairman of the coal committee of the Council of National Defense that the country is not producing enough oil to win the war and that if nothing were done to develop new wells the reserve supply would be exhausted in twelve months and production would be 50,000,000 barrels less than the requirements.

Statistics made public by the statistical bureau of the Independent Producers Agency on June 18, covering California oil fields for the month of May indicate that stocks were reduced 982,886 barrels, a daily average of 31,706.

The production of oil in May amounted to 8,084,347 barrels, a daily average of 260,785, compared to a total yield in April of 8,077,402 barrels, a daily average of 269,247, indicating a falling off in May of 8,462 barrels daily.

Shipments in May totaled 9,067,233 barrels, a daily average of 292,491, against total shipments in April of 8,907,847 barrels, a daily average of 296,928 a difference of 4437 barrels daily.

Stocks of oil on June 1 are stated at 37,842,544 barrels, against 38,825,430 barrels on May 1. Stocks on January 1, 1917, totaled 43,640,294 barrels, indicating a total withdrawal of storage oil during the first five months of the year of 5,797,750 barrels, a daily average of 38,396. Total withdrawals for the same period last year amounted to 4,059,416 barrels, a daily average of 26,706. The 1917 period, therefor shows an increase in withdrawals over 1916 of 1,738,334 barrels, a daily average of 11,690.

The agency's summary of field operations indicates 68 wells completed in May, the same number being finished in April. There were 355 wells on the drilling list on the close of May against 342 on the close of April a gain of 13 strings. There were 65 new rigs up on the May end against 45 on the April end, an increase of 20. Wells producing totaled 7307 on the end of May against 7215 on the end of April, an increase of 92. Fourteen wells were abandoned in May against 16 in April.

Fads, Foibles and Flub

A strange thing is the human mind. Some contend that it is exceedingly complex, while others are convinced that it is so simple as to pass understanding.

When Kipling said "East is East and West is West, and ne'er the twain shall meet," he but voiced the general idea that there is something so subtle in the Oriental mind that we of the Occident can never grasp it. Yet those who have been the closest students of Orientals tell us that the reason we do not understand the working of the Eastern mind is because we invest it with too much subtlety. In truth, they say, the Oriental mind works with greatest directness, arriving at given points of conclusion, argument or philosophy by the simplest or most direct route. That is the reason we cannot understand them.

All of which is aside from the matter of which we started to write. It will serve, however, as a sort of text for a short sermon on the fads, foibles and flub of the human mind that have been brought to the surface by the great war into which we have been plunged for some reason that has not yet been vouchsafed us. Probably that reason is so simple that we fail to grasp it, just as we fail to grasp the trend of Oriental thought.

It is a well recognized fact that crises bring out much good that is latent, much of the bad that is under control and much of the insanity which is conceded to be a part of the average human mentality. The fads, foibles and flub that seem almost hysterical at the present time may well be attributed to the dormant insane streak of humanity. For this reason, if for no other, we can excuse many of the things said and done under the present stress.

But the trouble with us is that it is in times of stress that we become the most intolerant. We want to impress everybody with our ideas, beliefs and foibles but we do not want anybody else to have any of their own, especially if they are not similar to ours.

But there are some people who are cool and calculating during the period of stress and these people take advantage of those who are either hysterical or whose mentality makes them easy victims of the charletan and demagogue.

Take, for instance, the incident of Lord Beresford breaking a plate at a London banquet, because, while speaking, he fingered his plate (rather an unusual thing for a speaker to do, by the way) and discovered that it was "Made in Germany." There followed a general crashing of plates of the diners, and the whole nation lauded Lord Beresford for his patriotism.

Of course it was a well arranged and well staged bit of play acting, but it served its purpose.

It was the principle of the thing that counted and not the thing itself. No Englishman, and for that matter, no American, or no Frenchman, or no Belgian, or no Russian, or no Japanese, or no Italian, and so on to the end of the chapter, should use anything "made in Germany." It is the principle of the thing that counts and not the thing itself.

Let us carry that principle to the natural conclusion. When the war began a large number of ships, "made in Germany," were interned at various ports of the world. We entered into the war when the ships of a then friendly nation were in our ports and we took over those ships and are now using them. If Lord Beresford was right about that dinner plate we ought to destroy those German ships instead of using them?

Beresford flub will not fit ships.

Then there is the flub of those "Society" ladies who are going forth to tell the "poor and lowly" in other words those not in "Society" how to dress. They have decided to have two suits of khaki, neither more

nor less. One to be worn while the other is in the wash. They call upon all "poor and lowly" to follow the good example and then give it out for general information that they do this for an example and not from any idea of economy, for under their khaki suits they are going to wear lingerie worth thousands of dollars worth enough to supply many families of the "poor and lowly" with entire outfits.

If these "Society" ladies, who may be likened to Marie Antoinette in her advice to the poor to eat cake when they had no bread, are really in earnest in their desire to set an example, and at that it is a question whether the example of some of them would be good ones, like that of the lady who deliberately endangers life and limb of the "poor and lowly" by running her car at a fifty mile rate and escapes with a ten dollar fine even after she has done this three times, but to go back, if these "society" ladies are really sincere they will use their dollars to benefit the various causes now so urgently demanding help and really wear their khaki suits for economy sake and at the same time, under the khaki wear the ordinary lingerie that is worn by those whom they are pleased to designate as "poor and lowly".

Our women are called upon to assist in conserving the food supply of the nation. As the Derrick has pointed out in previous issues, we are prone to waste our supplies because we have never known any better. The careful housewife is the exception and not the rule. Many women profess to scorn the cares and duties of the home, and, with supercilious air and sneering tone, either boast of their wasteful habit or of their lack of knowledge of the simplest hygienic rules. Naturally a woman with this sort of mind is hardly worth consideration, yet when we find her so much in evidence among those who should know better we cannot help feeling that much of their attitude is silly pretense in order to impress others equally as weak minded.

But to get back to the point. Our women are responding nobly to this call for conservation. One of the first results is the suggestion on part of a prominent club women that all women wear aprons of uniform pattern. This suggestion, by the way, was made seriously.

Let us not take any of these fads, foibles or flub too seriously. It is the effervescence of excitement. We almost said the scum that rises to the top of the pot when it begins boiling. The solid, substantial thinking mind is beneath it all and the froth represents nothing except natural variants from the normal, just as the scum represents that which is not useful in the food. It will all come out right after we have gone through the fire. What we are passing through now is what England and France passed through at the beginning of the war. Now they know better for they have been seared and scorched by such a flame as never before blasted the earth.

After we have really begun to feel the effects of the war; a war whose end no man can predict—after we have lost our sons by the millions, after we have felt the pinch that comes from military domination necessary to carry on a war of this magnitude, then, and not until then, will the dross and the flub be burned away and the great heart of our Nation beat with rythmic impulse from the hearts of the whole people, bettered and purified by that process through which only can a people be purified—the process of trial and bereavement.

A Fictitious Food Shortage

We are paying extraordinary prices for our food these days, and we are told that the reason for this is that there is a national shortage of food supplies of all kinds.

On top of this come government reports showing that our crops are the greatest this nation has ever known

Then the apologists come back and say that the demand is extraordinary and prices are regulated by supply and demand-extraordinary demand makes high prices.

There are no more people in the United States now than there were a year ago. If the national demand has increased these people are eating about double what they ate then. But, in fact, these people of the United States are eating less than they were a year ago. If you do not believe that just go to any restaurants, hotel or boarding house and take a look at the size of the food portion that goes on the plate. Go to any store where provisions are sold and see if the amount sold is not less.

We are confronted with an anomolous condition. There is more food supplied and less food eaten, yet prices have gone so high as to become almost prohibitory. Now we reach the real cause. It is a ficticious food shortage, so far as the United States is concerned. Out of our plenty we are selling to the nations whose great game of destruction has compelled them to forego the greater game of production. It is now a game of Pillage instead of Tillage.

And we are being pillaged. Not by our foreign enemies but by our own people who are sending shipload after shipload of our best food products to feed the Europeans who can pay for it if it can be gotten past the submarines.

We are called upon by every art known to the beguiled to give of our plenty to aid the suffering people across the water, and it is right for us to aid the suffering to the extent of our ability. But it is not right to inflict suffering on our own people by depriving them of the necessities of life in order that we may help those who are compelled by their necessities to pay more for our food than we can pay for it.

With our fields smiling with abundant crops, with our warehouses groaning with plethora of food, with our factories working night and day, with out laboring elements achieving the highest rate of wages in history, we are worse off today than we have ever been in times of distress and panic, in times of war and devastation. And the worst of it is that it is unnecessary and criminal. It is a crime against our wives and babies; it is a crime against those of our men whom we send out to fight under the Stars and Stripes; it is a crime against the very Nation itself. The crime is perpetrated because our country has never found it necessary to put itself in position to safeguard the people against this contingency.

We are called upon to give and give and give for

the Nation until it seems we can give no more, and it is but a just return on part of the nation to see to it that in our giving of our blood and treasure we are at least to be permitted to retain food in sufficiency for our own needs before we send to those whose improvidence has brought them to the verge of destitution.

There is much discussion going at the time this article is written over the appointment of a Food Dictator for the United States. Some of the Senators, and unfortunately they are in a minority, take the broad ground that safety first means that our charity should begin at home. If the appointment of a food dictator means that he is to be given power only as to conservation then, and only then, it will be a good appointment. But if it means that he is to be given power of distribution to foreign countries it will become intolerable.

President Wilson, today, is vested with dictatorship powers exceeding the power of any other human being on earth. He is vested with powers greater than those of the most powerful autocrat, and every additional power resting in his hands, such as the appointment of a food dictator, means but a tightening of the autocratic chain on a free people unless he be sufficiently wise and sufficiently honest to resist the temptations that come with power.

If the food of America be for America First, then it is well to have a food conservator, but if it is for the purpose of placing our people on a parity with the European peasantry, then it holds dangers for the stability of our government.

Potatoes and Onions Rotting in Fields

This is the news that comes from the great central valley of California: "Potatoes and Onions are rotting by the car load because the growers cannot get enough for them to pay the cost of production".

On the top of this comes an appeal from the State Council of Defense asking everybody to eat potatoes and onions.

This is a natural result of the hysteria that took possession of the people early in the year when speculators put the price of potatoes and onions so high that they were out of reach of ordinary pocketbooks. There was no deficiency in supply then but there was a scare on, and this scare was helped along by this same Council of Defense who told the people to plant potatoes in their back yards, to tear up their rose bushes and put in onions, to spade up their lawns for vegetable gardens.

Instead of taking the proper method of procedure and going after the speculators who filled our warehouses with potatoes and onions, the burden was, as is always the case, put on the people who have to buy.

There was a remedy then, easily applied, but nothing was done. There is a remedy now, easily applied. Will the Council of Defense apply it?

The Derrick has called attention to the hysteria and demagogueism that has come out of the war scare, and it still believes that what it said then is true. The state is producing so many potatoes and onions that they are rotting in the fields yet here in San Francisco the hoggish dealers are charging 3 and, in some instances 4 cents a pound for both. The most insignificant and ordinary potatoes, such as we would not buy in ordinary times at any price, command in the vegetable stands in San Francisco 2 cents a pound.

If the men who compose the Council of Defense are sincere in their protests that they wish to help the whole people of the state they have several remedies the first and most important of which is the taking over of these rotting crops and putting them in storage to be sold for the benefit of both the producer and the consumer. It will cost some money but the money is better spent in this way than in paying expenses of useless commissions.

Vegetables and fruits were never higher in San Francisco than at present. The farmers never had more abundant crops. What is the answer?

One dealer, when taken to task for the excessive prices on his fruits, replied that it was because the farmers could not get labor to gather their crops, and as a result the crops were wasting in the orchards.

Here is a situation that demands such action as only men of minds broad enough to see beyond their present personal aggrandizement can take. Let the State Council of Defense get down to earth and work out a way whereby the rotting crops will cease to rot because they are carried to the hungry people at a price remunerative to the farmer and reasonable to the consumer.

Let the proper officials see to it that the outrages of retail vegetable and fruit dealers are stopped. Let the man who makes ten boxes of berries out of six be prosecuted; find out why dealers in the same block charge different prices. It has come to such a pass now that if you question the price of fruits or vegetables you are almost insulted as the dealer tells you "to take it or leave it."

California is cursed now, as it has always been cursed, with a set of provision hogs who take every advantage of the people. We have laws passed for the protection of the people in the matter of food but these laws are openly violated and ignored with never an attempt to see that they are carried out.

Officials whom we pay for the purpose of carrying out the law curtly tell us to swear out a complaint and they will attend to the matter. It is an open and notorious fact that the laws providing for good meat are violated every day so openly that meat unfit for human consumption may be found in a hundred shops in San Francisco, displayed for sale with a brazenness that can come only from connivance of officers of the law.

It is all very well to call upon the people to save food, to conserve food, and to "save a slice of bread a day to beat the submarines" but so long as the government and its officials are lax and permit of such extortions as both producer and consumer are called upon to submit to, the people are going to try to take care of themselves first. If we have a food dictator and if the food of the nation be put under national control, the first step in this control should be to take away from the food hogs who now run the vegetable and fruit stands, any power to sell at all.

The thrifty woman who looks out for her family's hungry mouths and who has sufficient mentality to provide for the future by storing up a small supply of food

for future emergency, has been held up to contempt by the hysterical demagogues, but they have been extremely careful to say nothing about the men who are robbing us daily by their extortionate prices for necessities, and at the same time making it impossible for the farmer to get back even the money expended for his seed and labor in making a crop.

The governor of California has given evidence of his desire to protect the state and the people. Let him see to it that some of the emergency money voted him for protective purposes is used to relieve the present situation among the growers and also bring the products of the farm to the people at reasonable rates. This is an emergency that has come from within even before we have felt the slightest effect of the war from without.

OIL AND DYNAMITE NOT MOST DANGEROUS

One might naturally suppose that cargoes of dynamite and of petroleum would be the most dangerous for ships to carry, but from a sailor's point of view there are far more dangerous loads. One of the dreads of a deep-water sailor is a cargo of sugar. Put hundreds of tons of cane sugar in casks in the hold of a vessel and let the ship steam through a belt of hot weather. The odor is sickening. The sailors cannot get the taste out of their mouths, and they constantly crave lemon juice or vinegar to give the freedom from the sickening sweet. They lose their appetites and are always glad when the voyage is ended. Coffee is as disagreeable and in addition to this it is considered a dangerous cargo.

Cotton is a very dangerous cargo. If a little oil happens to get into raw cotton the result is spontaneous combustion. A single bale of cotton saturated with such oil as linseed, and lying in the bottom of the hold can be compared to a slow match attached to a bomb.

Acids and other chemicals form dangerous cargoes. Carbide of calcium, for instance, is more dangerous than dynamite. Acetylene gas is made from this chemical and the gas is constantly given off if the product is exposed to the air.

Shipmasters dislike carrying drums of acid where they cannot be reached readily. A Chilean ship recently put in at the Falkland islands, leaking badly. Her cargo was made of acid in drums and chalk. The acid had leaked from the drums and mixed with the chalk forming carbonic acid gas in the hold. As this is a deadly gas the crew could not make repairs and the acid gathered at the bottom of the hold and ate away the iron frames of the ship.

But there are sometimes strange sailor yarns that come of cargo dangers, and that of the good ship Ponhook, carrying a fine cargo of fine codfish is one of the most remarkable. Her hold was filled with dried codfish and she sprank a leak. The Atlantic water was greedily drunk up by the dried fish, with the result that the timbers of the vessel could not stand the strain and she went to pieces.

All old seamen remember the story told by the late Major Archibald W. Butt, who lost his life in the Titanic disaster. Before Archie became a major he was in the quartermasters department and his first assignment was to take a cargo of oats from San Francisco to Manila, on one of those transports which were sawed off on the government by unscrupulous contractors at the time of the Spanish-American war. Half way to Guam the old vessel shipped a sea and a couple of tons of water sluiced into the hold. This was just what the oats were crying for and they took it up and called for more.

They became so insistent that they swelled until they sprouted.

When the young quartermaster reached Manila he did not have a cargo of oats but had a splendid farm. Oats were growing out of the hatches, climbing the masts, festooning the bridge and bursting through the seams and hanging down the sides like a California quarter section afloat. This is a better story than the codfish yarn.

Oil as a dangerous cargo is not dangerous because all elements of danger are eliminated by carefullness. When a cargo is known to be inflamable and explosive precautionary measures are taken, and the motto of "Safety First" applies so strongly that the danger is really eliminated.

CONSCRIPTION IS NOT PATRIOTISM

Our government has deemed it wise to inaugurate a draft of troops to fight its war with Germany. There are several misconceptions regarding this draft. The first is that the registration of nearly ten million young men was a spontaneous evidence of patriotism, and it has been so heralded to the world-for moral effect of course. These young men did not register because they were patriotic. They registered because they had to.

The old story of the Mexican general who was called upon for volunteers by one of his colonels is apropos. The volunteers arrived at the colonel's headquarters and presented the following note: "Here are the volunteers, please send back the handcuffs."

Another misconception is that we should not resort to a draft until England forces a draft on her own people. The fact that Canadians threaten revolution if there be conscription in that colony or that Australia presents the same menace, or that the people of the British Islands declare that they will not resist any attempt to draft them, has no bearing on our position. We are not fighting for England. We are fighting for ourself. England's method of getting soldiers does not interfere with the individual freedom or individual rights of British subjects. That, however, as nothing to do with the American method of getting soldiers. We cannot be expected to follow England's example in all things.

The United States is at war and requires soldiers. We have elected our president and we must trust to his judgment and meet his demands. He called for volunteers and the response was so feeble that he was compelled to resort to the disagreeable conscription act. The fact that he is president because we believed he was keeping us out of war cuts no figure in the case now. We took a chance and now we must abide by it. Because we are displeased with our president on account if his present war attitude in no way relieves us of our duty to our country, and if we wont volunteer willingly then "please send back the handcuffs."

CONTROL IN GERMAN OIL COMPANY SOLD

The Standard Oil Company, of New Jersey has sold the controlling interest in the Deutsche-Amerikanische Petroleum Gesellschaft, for years its principal German subsidiary, to German capitalists headed by Heinrich Riedemann. It is stated that the transaction was concluded before the declaration of war and that the Standard succeeded in having all of its funds transferred to the United States. The large fleet of tank steamers belonging to the German company was transferred to the New Jersey company and placed under American registration.

California Derrick

The Oil Authority of the Pacific Coast

PUBLISHED MONTHLY
—BY—
The California Derrick Publishing Company
DR. CLARENCE E. EDWORDS .....Editor
E. L. MACKEY ..... Business Manager

OFFICES
509 Sansome Street, San Francisco, California
Telephone Sutter 2984
Editorial Rooms 417 Montgomery St., Room 422
Telephone Douglas 3617

Subscription price, per year, $2.00 **Foreign $2.25**
Advertising Rates on Application
Entered as second-class matter February 17, 1912, at the postoffice at San Francisco, Cal., under the Act of March 3, 1879.

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READY FOR ANOTHER LIBERTY LOAN

That the first Liberty Loan was oversubscribed was a good indication of what the country can do on a pinch. That pinch is coming more rapidly than most people think, and it will not be many days before there will be another strenuous campaign for a second $2,000,000,000.

Taking the stand that the "one particular and outstanding lesson learned during the past few weeks in connection with the sale of the Liberty Loan Bonds is that subsequent loans will be floated largely on the basis of experience gained in placing this issue" the American Bankers Association, which has led a nation-wide campaign for the Liberty Bonds, has addressed a circular to the 30,000 banks and trust companies throughout the country asking them for information in regard to the amount of bonds taken by the bank, the number of subscribers represented, what will be retained and the classes of subscribers.

Information is also asked in regard to the amount of "hidden money" invested, the extent of cooperation by employers, the amount withdrawn from savings banks, instances of selling security holdings to buy bonds, the use of the partial payment plan and the expense of each institution for advertising and selling bonds.

A circular has also been addressed to the chairman of the Liberty Loan Committee in each A. B. A. bankers group or congressional district asking for various information regarding the advertising methods, organizations aiding the campaign and other details of the work of distribution. While it is recognized that full answers cannot be made in all instances it is believed that the value of the materal resulting from the inquiry will be great.

It might be well for the A. B. A. to continue their inquiry into deeper points of interest and possibly avoid the stigma that is now attaching to many of the methods of raising the first Liberty Loan. Money gained through compulsion or through coercion is not wisely gotten money. Take, for instance, the fact that all of the employees of the great Postal System of the United States were compelled to take bonds and pay for them out of their scant wage. It was not a request but a command and was enforced by holding out the amount of the installment.

A similar case in point is the fact that the employees of the City were made to buy bonds and without their knowledge or consent their money was withheld and put into installment payments on the bonds.

There may be a few men in time of national stress that demand large money payments, who will refuse to do their best to help the government, but there is not a man who likes to be "held up", whether it be by the government or by the individual. It is a matter of knowledge to the Derrick that a number of business men of San Francisco so resented these "hold up" methods that they refused to put any money whatever into the bonds. There is no question that such men are to be found all over the country, for above all things the true American loves fair play. It is not fair play to compel a poorly paid employee, whether he be employed by government or private capital, to put some of his money into an investment when he is probably straining every nerve to meet the monthly bills, and possibly paying them from 7 to 8 per cent interest on borrowed money. One instance that shows the hardship has come to the Derrick's knowledge where a man drawing a salary of $80 a month was compelled to take a bond and pay monthly installments of $5 for a period of twenty months. This man has an invalid wife and three dependent children, and is any one will tell how he's going to get along with a reduction of $5 a month on a salary of $80, it will be a good thing to pass around.

The largest outpouring of money that ever came to help a distressed country came from France, but there was no coercion. It is a good example.

DRILLING COSTS AT HIGHEST POINT

Oil well drilling cost is about two and a half times higher than formerly. Yet there has been no concurrent increase of price of crude at the well, even with slowing up of production and great increase in demand. Midcontinent crude is now quoted at $1.70 and a year ago it was $1.55. California crude has gone up to 98 cents and the supply is diminishing so rapidly that we are facing a crisis. There is little incentive for the small owner to proceed with the work under present conditions, especially as he knows that by holding on a little longer he will get top prices for his land.

In addition to high cost of drilling producers have experienced much difficulty in obtaining supplies at any price. Casing is to be had only in small quantities and at such times as the dealers can find it. New supplies have been unobtainable at any price in many instances and producers have been compelled to remove supplies from the older fields in order to carry on development work in the new ones.

One of the old expressions used to express the depth of meanness was that a man "would steal the bottom out of a well." That is paralleled in California oil fields, for it is of recent record that two men made a good haul by going to an abandoned well at night and stripping it of its casing, which they hauled away and sold, making more than $1,000 by their night's work.

The Lima and Illinois fields, which have been regarded as practically exhausted, have been stripped of supplies, including tanks and pipe lines, in places. This

material has been sent to Wyoming for the most part, where active development is under way, and results have already been gained that established Wyoming as a big factor in the light grade oil market. New York has progressed favorably in Kentucky but the wells there do note "hold up" in production.

Further difficulties have been encountered in the last few years by the producers, in the attitude of the government on land withdrawals. Producers claim the government has been unfair in certain cases, maintaining that they have gone to much expense and at times personal risk in proving new fields only to have those fields withdrawn by the government.

In California the result has been that work has stopped on more than 3,000,000 acres of land, and the state is consuming oil at the rate of 300,000 barrels a day compared with 265,000 barrels a day produced. Consequently it is taking 35,000 barrels a day out of storage. Oil stocks in California have decreased from 57,000,000 barrels on January 1, 1916, to about 25,000,000 on July 1, 1917. At the present rate of depletion this supply will be wiped out in a relatively short time.

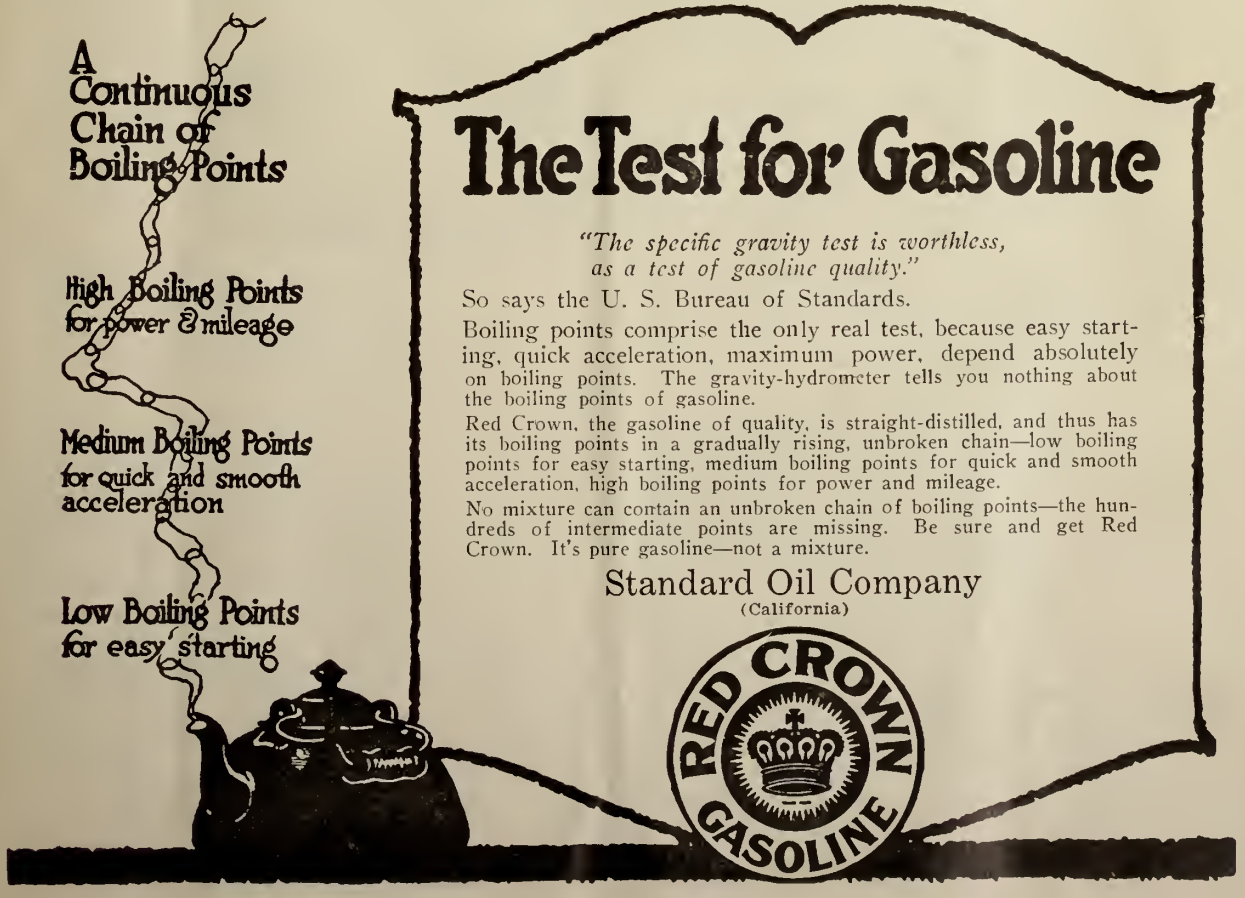
Producers are also disturbed by the suggestion of certain refiners that the burden of supplying the government with oil for war purposes be shared by the producer. The producer, however, maintains that he assumes all the risk in the oil business. He is the most hazardous end of what has been termed a "hazardous industry." With drilling needs growing, and drilling costs what they are, and failure of crude prices to advance to meet that increase, many of the producers take the position that they would rather quit the business than assume the obligations without some sort of compensation

MEXICO AFTER OIL COMPANIES

Advices from Tampico, Mexico, state that an order has been issued by the Department of Commerce and Industry for the immediate removal of fifty steel storage tanks in the Gulf Coast fields. These tanks were erected and are owned chiefly by the Penn-Mex Fuel Company, and other Standard Oil Subsidiaries. There is about $500,000, gold, invested in them. It is alleged by the Mexican government that official permission was not given for their erection. It is reported that many other storage tanks will have to be abandoned for the same reason, and that the government contemplates the confiscation of many producing oil wells because they were put down without the operating company first having obtained the authority from the government to do so.

OIL FOR THE ALLIED FLEETS

Reports that the government would requisition American tankers to supply petroleum products to its allies are believed by oil men to be unfounded. Recent purchases of fuel oil in this country for the entente allies account have amounted to 200,000 tons, or about 1,500,000 barrels. To insure an organized and dependable movement of this commodity fifty seven oil carriers of bulk, have been volunteered by American oil companies to the committee on oil of the National Council of Defense. It is understood that these tank ships will be utilized as needed and on a basis that will apportion the burden as equally as possible and with the utmost consideration of the urgency of private obligations and interests.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Boiling points comprise the only real test, because easy starting, quick acceleration, maximum power, depend absolutely on boiling points. The gravity-hydrometer tells you nothing about the boiling points of gasoline.
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Standard Oil Company
(California)
RED CROWN
GASOLINE

News from California Oil Fields

McKittrick:—Extending with a rapidity that has commanded the attention and deep interest of operators throughout the state, the General Petroleum Corporation, which but one month ago started twenty-five new wells in section 19, township 26, range 21, in the Lost Hills field has commenced work in section 13, 26-20. No definite information has been given out as to the total number of new rigs the company intends to put up during the remainder of the year. Wells now in course of construction are making excellent progress in the main and the ones brought in are making a creditable record.

Frederick W. Kimble, who for several years was prominently connected with the petroleum industry in the Belridge field, and of late years has made his headquarters in San Francisco, has associated himself with Mortimer Fleishhacker, and they will shortly begin operations in the south west quarter of section 12, 29-21, in the Belridge district. The property is situated south and east of that belonging to the Marina Oil Company, which has some good producing wells in the territory.

The East Puente Oil Company, operating in the north end of the McKittrick field, is adding a new well to those in Camp No. 2, located in section 12, 30-21.

On section 24, 26-20, in the Lost Hills district, the California Star Oil Company has started a new well. Much new work is in evidence on this lease, and plans are being prepared for some notable additions during the coming summer months.

In the Belridge district tests of water shut-off are in progress on leases of the General Petroleum Corporation in section 2, 29-21, and of the Associated Oil Company on section 11, 26-20.

The stockholders of the Amber Oil Company met in annual session at Bakersfield on July 9 to elect officers to serve during the ensuing twelve months. Its property is located in Kern county, and the president is John Kincaid.

The Marina Oil Company has purchased from Emily B. Hopkins the southwest quarter of section 3, 29-21, and the northwest quarter of section 10, 29-21.

The Dome Oil Company has transferred to the Pinal-Dome Oil Company its right and interest in the north half of the northeast quarter of section 23, township 31, range 22, in Santa Barbara county.

The Midway Peerless Oil Co., which is owned by Los Angeles capitalists and operates a number of wells on section 15, 31-22, in the North Midway district, has brought in a well that is pumping 150 barrels a day. The depth exceeds 1600 feet. Situated in close proximity to the leases of the Hondo Oil Company, the Dominion Oil Company, and the Manley and McGinn Oil Co., the progress of the drilling has attracted considerable attention on the part of oil men in the Midway field, and the production is viewed with general satisfaction. The Midway Peerless Oil Co., whose president is M. T. Whittier, has started work on two wells, and will likely add materially to its list. The capital stock of the company, which was organized six years ago is $600,000

The McKittrick yards of the Southern Pacific constitute perhaps the busiest spot in the West Side oil fields just now, on account of the arrival daily of several cars of materials for the General Petroleum Corporation and the Standard Oil Company, together with occasional consignments for other concerns, the greater portion of these supplies being destined for the Belridge Lost Hills fields. Many trucks are in service, and from all that can be ascertained these will be kept in operation for many weeks to come.

The General Petroleum Corporation, while easily the leader in development work in the Lost Hills field, is also quite busy in the Midway district, where redrilling of wells on different sections is being carried on, four wells being located in section 15, 31-22, and two in section 14, 31-22. In the same field the North American Consolidated Oil Co. is redrilling two wells in section 2, 32-23, and similar work is going on at the lease of the United Oil Co. in section 6, 32-23, one well being given attention.

In the McKittrick field, well No. 1, of the Standard Oil Co., in section 8, 29-21, is being tested for water shutoff. Good evidences of oil are reported to have been found in this hole, which has experienced considerable trouble with water within the past few months, and it is understood that the drill will be sent much deeper. Well No. 6, of the Pittsburg-Belridge Oil Co., in the Belridge district, where the company has a lease in section 30, 28-21, is likewise undergoing a test. The Associated Oil part in the exploration of the Lost Hills company, which is taking a prominent region, and the Crescent Petroleum company, also an active factor, are each making a test of their respective properties there. In the Midway field such work is in progress by the Chanslor-Canfield Midway Oil Co. (Santa Fe), and the

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SOUTHERN PACIFIC

Write for Folder on the Apache Trail of Arizona

Kern Trading & Oil Co., the first named making a test of three wells, and the latest testing one.

Redrilling is in progress in well No. 16, on the property of the San Francisco and McKittrick Oil Co., in the north end of the McKittrick field.

The Kern Trading & Oil Co. has completed the rig for well No. 4 on the Foltz lease in the McKittrick district, and drilling will be under way shortly. Well No. 3 is undergoing a test for water shutoff.

On the lease of the East Puente Oil Co. in the McKittrick field, the sinking of well No. 6 is being given attention. This hole, in the new camp of the company, will be quite close to the new wells of the Kern Trading & Oil Co.

The Marina Oil Co., which has been drilling several new wells in section 3, 29-221, in the Belridge district and intends to still further improve the property, is testing its fifth well for water shutoff, and the Kern Trading & Oil Co., in the same section, is making a test of well No. 51. On section 26, 29-21, on the North McKittrick front, similar tests are being carried on by the H. S. Williams Oil Co., in well No. 50, and by the Suncrest Oil Co., in well No. 1.

MIDWAY FIELD.

The Ida May Oil Co., on section 2, 11-24, is preparing for work on its No. 5 well. The lumber for the rig is being hauled by Woods & Hausen. The Ida May company has one active producing well on its property.

R. K. Howk of the Midway Supply company has shipped several cars of 12 1-2 inch casing to Delta, Utah, where it will be used for the Stearns-Rodgers Sugar Co. of St. Louis. The Stearns-Rodgers company is planning on producing its own petroleum for fuel and will drill in Utah to this end.

Oil men are anxiously waiting the report of the committee recently appointed by Governor Stephens to investigate the alarming shortage in oil production and the increase in consumption.

Field activities in the Midway-Sunset oil fields have slackened up somewhat because of the shortage of material, but not an appreciable extent as yet. The larger companies are still running numerous strings of tools and have many wells on the producing list.

The No. 14 well of the Kern Trading and Oil Co. on section 25, 31-23, being drilled by the California Well Drilling Co., under contract, has had the 12 1-2 casing set at 2655 feet. It was drilled by a rotary. The well will now be allowed to stand for two weeks and then tested for water by the State Mining Bureau officials.

The drilling operations of the Kern Trading and Oil Co. will be watched with interest by oil men of the Midway for the next few weeks. This company, which recently bought the properties of the Lost Hills Development Co., has started 25 wells there. The territory is shallow and the wells can be drilled with one string of pipe to their depth, about 500 feet, at a small cost, and will produce between 80 and 100 barrels.

The Kern Trading & Oil Co. has assigned all of its agreements for drilling operations to the Southern Pacific Co., which has now taken over all of the properties of the Kern Trading & Oil Co., in pursuance of the railroad's plan of doing its own drilling and producing in the future.

Drilling contracts held by the W. D. Head Drilling Company, Edwards & Linker Drilling Co., William Keck Drilling Co., and the California Well Drilling Co. have been assigned. Contracts for the purchase of oil from the Pinal-Dome Oil Co., Richfield Oil Co., Tarr & McComo, H. M. Payne and the Dunn Manufacturing Co., have also been assigned.

MARICOPA.

One of the most active periods in the development of the property controlled by the Lakeview No. 2 Oil Co. and the Interstate Oil Co. located on the Maricopa flat, is now on and Superintendent Leroy Evans has a large force of men engaged in the work of drilling up the property and keeping the wells already finished on the production list.

A resume of the work now going on shows the No. 14 well of the Interstate Co. which was spudded in nearly two weeks ago down to a depth of 1000 feet with the drillers making record time. The well is being drilled with a rotary outfit and a 15 1-2 inch stovepipe casing is being used. No. 4 well on the same lease is producing 1100 barrels of high gravity oil every 24 hours. No. 12 well is doing 150 barrels a day and No. 6 is doing a like amount.

On the Lakeview No. 2 lease the No. 3 well, known as the Jonah hole of the property is now down deeper than ever, and drilling is in progress at a depth of 3300 feet.

Nine new wells have been drilled by the company in the past 15 months and out of the nine wells eight at the present time are producing and the other well is expected to be on the producing list in a week or two.

SAN LUIS OBISPO.

The Associated has a rig up for No. 1 on the Pezzoni lands near Los Alamos, also for No. 1 on the Coral de

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Quati, between the Standard Oil Co.'s Fithian No. 1 and Los Olivos.

The Head Drilling Co. is building a rig on the Stokes lease between Casmalia and the wells now being drilled by the Standard near Guadalupe.

Pinal-Dome Well No. 1, on the Elizalde is drilling at 1900 feet, and the Quintero No. 1 at 1500 feet.

Doheny-Pacific Petroleum Co. has completed wells Nos. 6 and 7 at 1700 feet, and both are pumping 600 barrels per day.

On the Doheny holdings in the Casmalia field have been finished two 1,000,000-barrel dirt reservoirs, one of which is nearly full of oil.

Palmer Union has a rig up for Stendel No. 4. This company has completed No. 3 at 3300 feet and will begin pumping soon.

AT THE STATE MINING BUREAU

Steps to avert the threatened shortage of petroleum in California are being taken by nearly every one interested in the business. The work of the State Mining Bureau in supervising the drilling of new wells is a part of such work as is the repairing of old wells which are producing unsatisfactory amounts of oil. In the past too little attention has been given to the details involved in developing oil land. The bureau has previously called the attention of operators to this fact and has pointed out the necessity of detailed engineering work in conjunction with the mechanical work of drilling. A marked improvement has already been noted.

Petroleum engineering, both in California and elsewhere, offers an extremely promising field during the next few years to those taking the pains to fit themselves for the work.

The Bureau will be in a position to enlarge its engineering staff, after the first of July, and has requested the State Civil Service Commission to hold examinations for engineers and inspectors at salaries ranging from $1500 to $2400 per year, with the possibility of still further advancement. Persons having an engineering education and some experience in oilfield work are urged to file applications with the Civil Service Commission at Sacramento, Los Angeles or San Francisco. No written test will be held, but there will be an oral examination before a special board.

The scarcity of oil well casing is resulting in the abandonment of various wells so as to prevent future damage to oil lands. Each well requires special treatment and no general rules can be issued. Owners of land upon which such wells may be situated are particularly cautioned to see that the work complies with regulations as the land is made liable under the law for the cost of remedying improper work.

A formal order has been issued by State Oil and Gas Supervisor requiring certain tests on wells near the southwest corner of section 23 31-22, where water conditions have been complained of and require some attention. Public attention is particularly directed to the fact that work to protect oil lands against infiltrating water is common throughout California, and the cost story is brought to light by the plan, and it is a story part of regular operation or maintenance expense. At one time it was commonly believed that the appearance of water in a certain locality meant the absolute ruin of the territory, but systematic operations under state direction have proved that water trouble can almost always be rectified and need not utterly ruin a property.

CRUDE OIL ADVANCES TEN CENTS A BARREL

Effective June 28, Standard Oil Co. offers the following prices for crude oil at the well, an advance of 10 cents over June 7 prices; San Joaquin Valley fields (Kern River, Midway-Sunset, McKittrick, Lost-Hills-Belridge, Coalinga); 14 deg. to 17.9 deg., 98c per barrel.

18 deg. to 18.9., 99 c., per barrel, and for each increase of one full degree above 18 deg., up to and inclusive of 24.9 deg., one cent per barrel additional.

25 deg. to 25.9 deg., $1.07 per barrel, and for each increase of one full degree above 25, up to and inclusive of 36.9 deg., two cents per barrel additional.

37 deg. to 37.9 deg., $1.22 per barrel, and for each increase of one full degree above 37, three cents per barrel additional.

Ventura County.

25 deg. to 25.9 deg., $1.17 per barrel, and for each increase of one full degree above 25, up to and inclusive of 36.9 deg., two cents per barrel additional.

37 deg. to 37.9 deg., $1.32 per barrel, and for each increase of one full degree above 37 three cents per barrel additional.

Whittier-Fullerton and Santa Maria.

16 deg. to 17.9 deg., 98 cents per barrel.

18 deg. to 18.9 deg., 99 cents per barrel, and for each increase of one full degree above 18, up to and inclusive of 24.9 deg., one cent per barrel additional.

25 deg. to 25.9 deg., $1.17 per barrel, and for each increase of one full degree above 25, up to and inclusive of 36.9 deg., two cents per barrel additional.

37 deg. to 37.9 deg., $1.32 per barrel, and for each increase of one full degree above 37 three cents per barrel additional.

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165 acres in the Parkfield District, Monterey Co., close to drilling operations. Water well on this property shows signs of oil.

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A ROMANCE OF THE MINES

It is not all prosaic work that comes to the Department of Corporations at Sacramento, as is evidenced by the recent permit issued by Commissioner Carnahan to the California-Calaveras Mining Company to exchange shares for those of the Del Rio Mining Company, under a plan proposed by David T. Adams. An interesting until the third note was about to fall due, when the typical of the way investors were formerly victimized by promotors.

Two promotors—W. O. Manson and A. J. Jarmuth—interested Adams and a number of other Chicago capitalists in a property in Calaveras and Sutter Counties, and persuaded them to organize a corporation for the handling of the project.

While Jarmuth had an agreement, or option from the owner—Mrs. Carolina Wright an aged woman for $120,000, Manson represented to his capitalist friends that the price would be $250,000. They wanted to see the land, but Manson declared that Mrs. Wright was old and excitable, and if she got information that eastern capitalists were interested she would boost up the price.

The deal was put through, Manson being placed at the head of the company, and for his trouble in getting the property, was to be paid $50,000, making $300,000 in all for the $120,000 purchase, and victimizing his associates by the manipulation $130,000 in excess of the $50,000 for services, making his prospective cleanup $180,000.

Three secured notes were turned over to Manson for $100,000 each. The little game went along swimmingly until the third not was about to fall due, when the fraud was discovered. Then Adams, financing the fight, and representing the other stockholders, brought action against Manson and others associated with him for the cancellation of the $100,000 note, and also an accounting among other things. Adams won out on all counts and secured judgment against Manson and Jarmuth for $83,-500.

For putting up the money in the fight in the courts—the action reached the State Supreme Court on an appeal from the judgment of the Calaveras County Superior Court—Adams was given a mortgage on the property. He finally forclosed, and sold the surface rights to the 7200 acres involved for $70,000. By this sale the company realized something like $14,000, which remains as the only asset out of $300,000 worth of stock.

Adams reserved the mineral rights. The company he has organized—the Del Rio Mining Co.—now proposes to utilize that right, and Adams is offering his fellow victims an opportunity to get in for another start, practically where they left off ten years ago, when the expose of the Manson and Jarmuth game came.

Under the permit from the Corporation Department, Adams is to hold 200,000 shares of Del Rio stock as a trust for the benefit of the California-Calaveras Mining Co. stockholders to be exchanged for the stock they hold share for share.

DENIES UNION OIL WILL INCREASE ITS CAPITAL

W. L. Stewart, president of the Union Oil Co. states that the report that the company is having a reappraisal of its properties made or that the company contemplates increasing its capitalization to $100,000,000, as the Standard of California has done, is not true. There has been no reappraisal, he says, and none is contemplated.

While some persons think the Union's holdings would justify the increased capitalization, it is pointed out by others that the present authorized stock of $50,000,000 is not yet all issued. In fact, more than $12,000,000 still remains in the treasury. The last issue of $3,500,000 was sold for cash to stockholders or to those to whom they sold their rights, and not distributed as a stock dividend, as the recent reports have said was the intention in case the capitalization were increased. Moreover when the last issue of stock was made there was strong opposition by a minority of the shareholders, headed by John Garrigues, E. B. Blinn and others. The opponents of the issue of the new stock maintained that the company was amply able to pay for all its needs out of revenue, and Commissioner Carnahan found this to be true, but allowed the issue to be made upon the theory that the directors were the most competent judges of the advisability of the action.

STANDARD OIL COMPANY ADVOCATES STRAIGHT-RUN GASOLINE

"You hear a good deal of talk lately about the quality of gasoline being sold," says J. H. McDermott, San Francisco District Sales Manager of the Standard Oil Company.

"Unsatisfactory results with motor-fuel are due to the

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great number of mixtures being offered the public in the guise of gasoline.

"Mixtures cannot be as good Motor-fuel as straight-run gasoline because mixtures cannot have a continuous chain of boiling points. Easy starting, quick and smooth acceleration, power and mileage all depend absolutely on the boiling points of a gasoline. And straight-distillation only can give gasoline the correct, unbroken, gradually rising series of boiling points.

"Incidently, gravity is a worthless test for gasoline. Gravity tells nothing at all about boiling points."

OIL NOTES

The San Gabriel Petroleum Company has incorporated at Los Angeles, with a capitalization of $100,000. The incorporators are Thomas A. O'Dannell, M. L. McCray, L. A. McCray, Ellis I. Varnell and J. D. D. Bladding.

The Keystone Oil and Gas Company has incorporated at Los Angeles with a capital of $9,600. The directors are William H. Schmitt, C. H. Biggs, E. H. Heizman, Lester H. Miles, Oliver O. Clark, Claud B. Andrews and Lester M. Gray.

The Royal Petroleum Company has incorporated at Los Angeles with a capital of $9,600. The directors are Albert Marple, Lester H. Miles, F. W. Munsey, R. E. Jillson, M. Gray and Claud B. Andrews.

Much interest has been aroused at Clovis, Cal., over the report that there are strong indications of an oil strike at the Clovis oil well.

The Associated Oil Company is preparing to develop the oil prospect at the Nipomo ranch, in the southern part of San Luis Obispo county. The company has leased 2298 acres of land from Mrs. Henrietta Stow.

The Big Chief Oil and Gas Company has incorporated at Phoenix, Ariz., with a capital of $250,000. The incorporators are Shirley Sloan, E. C. Reynolds and P. A. Burns.

The Associated Oil Company is reported as preparing to start a well on the Corral de Quati ranch, near Santa Barbara, Cal.

The Girard Oil Company has incorporated at Phoenix with a capital of $15,000. The incorporators are Gustav Becker, G. S. Pettit, G. S. Girard and George D. Key.

It is expected that drilling for oil will be in progress soon east of Los Angeles on what is known as Boyle heights. E. L. Doheny has leased several thousand acres in that vicinity.

E. L. Doheny is to start drilling for oil on the joint sewer farms of Pasadena, South Pasadena and Alhambra, within the next ninety days.

The Comet Oil Company has incorporated at Phoenix, Arix., with a capital of $200,000. The incorporators are E. D. Watkins, Lima, N. Y.; C. D. Pratt, W. D. Williams, Sam A. Hole and J. F. Harris, all of Irvine, Ky.

It is reported that Mrs. Laura Clark, formerly owner of the Clark well, at Encinitas, near San Diego, has again taken over the property and will complete the well.

The Midas Oil Company has incorporated at Los Angeles, with a capital of $20,000. The incorporators are Herman F. Cortelyou, John W. Cooke, J. C. Fountain, W. W. Patch and Frank L. Harrington.

The Interstate Oil and Refining Company has incorporated at Phoenix, Ariz., with a capital of $5,000,000. The incorporators are J. Robert Gillam, P. L. Steiner, R. T. Stuart, T. H. Beacon and J. H. Maxey.

The Kern Trading and Oil Company, now the Southern Pacific, is showing increased activity eight new rigs havng been erected during the past month.

The State Department at Washington is preparing to investigate and protest the recent decree of President Carranza, of Mexico, in placing a tax of $9.50 per ton on oil.

California has 10,000 factories, covering practically all lines of manufacturing merchandise, and produces annually $700,000,000 of manufactured products.

THE TOURISTS' ASSOCIATION OF CENTRAL CALIFORNIA

In a pamphlet called "For the Strangers Within Our Gates", the Tourists' Association of Central California has set forth the valuable service which it has rendered in its especial field. It has secured newspaper and magazine publicity in abundance; 800 columns of newspaper and magazine publicity has been given thru its efforts, while it has printed and distributed county booklets to the number of 661,000 pieces. Its exposition service will be recalled and its convention service is still actively maintained.

During a period of four years, it collected from memberships, $16,539 and from subscriptions and other sources, a sufficient amount to bring the grand total to $78,646. It has a cash balance on hand this year of $686. The association needs support and is worthy of it.

Dr. James B. Bullitt of the San Jose Chamber of Commerce is the president; Mr. D. L. Beard, a Supervisor of Napa County is vice-president; Mr. Leo Lebenbaum of the Northern California Hotel Association is treasurer and Dr. Frank D. Cloud is the able manager.

WHO MAY BORROW FROM THE FEDERAL LAND BANK

Only farmers can borrow from Uncle Sams' new bank, and they must come banded in groups of no less than ten, asking for at least $20,000. Loans can be as small as $100 or as large as $10,000 to any individual farmer, and must be on first mortgages and for improvement, stock, or the removal of past indebtedness. Any borrower must subscribe for stock in the bank equal to 5 per cent of the loan they propose to make.

For the benefit of farmers who wish to organize for loans, the following is of interest.

No loan may be made except upon the security of first mortgages.

The amount of the mortgage can not exceed one-half the appraised value of the land and 20 per cent of the permanent improvements thereon, which must be insured.

The proceeds of the loan must be used for the extinguishment of pre-existing indebtedness or for productive purposes, which include the purchase of livestock, fertilizers, equipment and improvements (see sec. 12, subdiv. 4, farm loan act.)

Every mortgage must contain an agreement to pay off the debt (principal and interest in fixed annual or semi-annual installments.

The amount of each installment may be fixed by the borrower, but can not be less than sufficient to pay off the debt in forty years, nor greater than to pay it off in five years.

The rate of interest charged any borrower can not exceed 6 per cent per annum.

The borrower can not be called upon to pay the debt except by the installments he originally fixes unless he defaults, but after five years he may pay off the whole or any portion at his option at any installment period. Under the amortization plan the term of the loan and the amount of each installment are relative: determining one fixes the other.

ANNOUNCING THE PUBLICATION OF A NEW DE LUXE 64-PAGE BOOKLET

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Standard Oil Companies before and after segregation.
Independent producing and refining companies, and their future in the industry.
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Vital statistics on
Thirty-seven Standard Oil Companies, showing capitalization, dividends, officers, etc., together with a detailed description of the business of each company, and the earnings during 1916.
Complete information regarding Fifty-one Independent Companies, giving all the physical and financial data necessary to the investor, whereby he may be enabled to secure all the information necessary to form an accurate judgment of the value of the investment.

The wealth of statistical information contained in this booklet makes it the first of its kind ever published.

It should be of incalculable value to those interested in oil securities.

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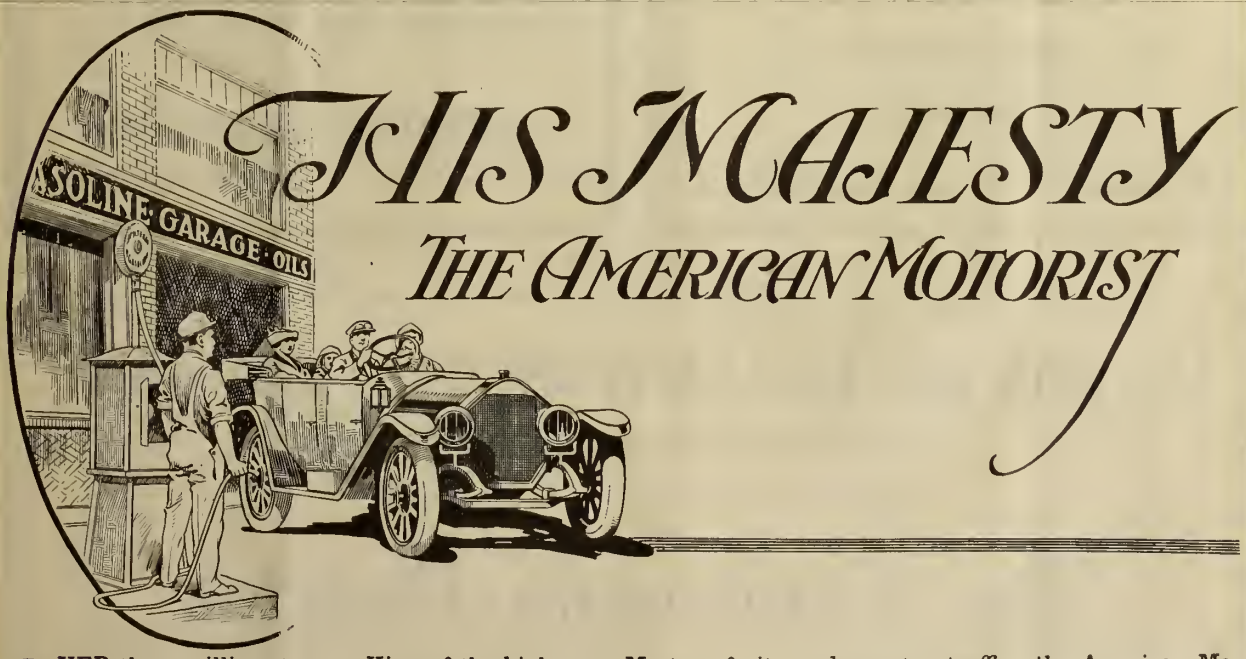
Vol. X SAN FRANCISCO, AUGUST, 1917 No. 12



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Vol. X SAN FRANCISCO, AUGUST, 1917 No. 12

Petroleum Situation Unsettled

Delay in fixing petroleum prices by the Government has worked much hardship to producers and has unsettled the trade. All interested in the industry are anxiously waiting the news that the vexing question has been settled. This is true not only of the California fields, but all over the country is the same uneasiness. In the Ohio valley there is a persistent feeling of optimism that immediately following whatever action be taken by Washington, crude oil prices will advance. Thirty-cent gasoline is not at all improbable before the end of the year, and 30-cent gasoline would bring Pennsylvania high grade oil around $3.50 a barrel, according to Findlay, Ohio, ideas.

Beaumont advices state that Texas oil producers who find it hard to make small wells pay in the face of the high price of material, say that the action of the government in fixing a price for oil has prevented them from realizing what the law of supply and demand would have given them under normal conditions.

"While the companies now supplying the government with fuel oil have little to say, it is generally understood that they are receiving $1.25 a barrel for fuel oil delivered, f. o. b. Port Arthur," says the Beaumont dispatch. "This oil cost them at the wells on contract from $1.30 to $1.25 a barrel. Credit balances are a little lower but there is not enough of this oil to become a controlling factor. When the cost of collecting and piping this oil to Port Arthur and treating it to bring it up to what is known as 'Admiralty oil' is figured, the refiners are out approximately $1.50 a barrel.

"With this condition staring them in the face, the marketing companies cannot consider raising the contract price, even though it should result in the closing down of small wells as being unprofitable. The size of the navy demand as originally given out, 50,000,000 barrels, is also a controlling factor. Should the Government find some way of using this amount of oil and demand it of the marketing companies, they would have to turn over all the oil they could secure, and a higher price would find them that much more embarrassed.

"One feature of the Government demands which is leaving oil men up in the air is the amount. During the year ended June 30, 1917, the Government used 1,400,000 barrels of oil. What with practically the same forces they would do with 50,000,000 barrels, oil men are at a loss to understand. Had the amount of oil asked for been held down to what the Government will likely need for the navy and other purposes, the law of supply and demand would have continued in operation and oil producers would probably be securing a price in keeping with the advance in cost production."

It is not yet too late for the Federal Government to relieve conditions and avert the fuel oil famine in California, but relief legislation must be enacted quickly if disaster is to be avoided. This is the view of those who are well informed on the condition of the industry in this state. They say that consumption in California is now above 60,000 barrels a day more than production.

The recent testimony of W. R. Scott, vice-president and general manager of the Southern Pacific Company, to the effect that his road would have to discontinue some of its trains within a short time unless the situation improved, has caused many large industries to wake up to the seriousness of the problem. The Southern Pacific is using 45,000 barrels of fuel oil a day, which is from nine to twelve thousand more barrels than it can buy or produce. Its entire reserve will soon be exhausted, and the reduction of train service then must follow, of necessity.

Meanwhile the richest oil fields of the west are denied the producers on the theory that a navy to be built five years from now could not be any greater than that which exists now with the country at war and American industries striving to supply half the world with commodities.

So acute has grown the fuel oil situation in California that oil companies have refused to enter into contracts with the state for its institutions, except at the market price. State Purchasing Agent McMillan states that he is encountering difficulty in securing oil for heating the normal schools. He says that the trouble seems to be that the state supply is 2000 barrels a day short of the demand. Not that the production is decreasing but the demand is increasing. He says:

"We have been informed by the Union Oil Company that it will not bid on contract except at market prices. The market price, today, is $1.68 a barrel. We had to pay $1.65 a few days ago for oil for the San Diego normal. There seems no hope of relief and that the situation will grow worse is apparent. As for the other state institutions, prisons and the like, where large quantities of crude oil are used, we were enabled to

make contracts for the year. These contracts will begin to expire soon, and the outlook is anything but encouraging."

Plans of the Council of Defense

Plans for averting the threatened shortage in California petroleum have been presented to Governor Stephens by the Committee on Petroleum of the State Council of Defense. These plans include the immediate drilling of wells in disputed territory, the exemption from military service of skilled workmen in the oil fields, the utilization of powdered coal, natural gas, hydro-electric power and other sources of energy wherever possible, and a better corelation between the oil companies, the oil pipe lines, the steamship companies and the railroads in order that transportation may be expedited.

The Committee on Petroleum was appointed by Governor Stephens in May of this year with the request that it undertake an immediate and exhaustive study of the petroleum resources of California, with particular regard to the industrial and military needs of the state and nation in the present war emergency. The members of the committee appointed by the governor are Max Thielan, Chairman; Eliot Blackwelder and David Folsom. Mr. Thielan is well known as the president of the State Railroad Commission. His experience in the regulation of public utilities has given him a wide insight into the oil situation of California, not only as it affects the railroads and other large consumers of petroleum, but also as it affects the small consumer, the farmer, the merchant and the manufacturer.

Mr. Blackwelder is at present professor of geology in the University of Illinois and was for many years connected with the University of Wisconsin. He has had wide experience in research work in the United States, Alaska, China, Manchuria and elsewhere for the Carnegie Institution of Washington, D. C., and the United States Geological Survey. As a result of this experience Mr. Blackwelder has brought an impartial mind to bear upon California's oil problem, particularly as it relates to the needs of the nation at large.

Mr. Folsom is professor of Mining Engineering at the Leland Stanford Junior University. He has spent many years in California and has an intimate knowledge of the oil situation in California and on the Pacific Coast.

In pursuing its investigation the committee visited all the oil fields in the state, conferred with government and state experts and officials, including the Committee on Petroleum of the National Council of Defense, and held frequent conferences with the leading oil companies of the state and the producers and consumers in general.

The importance of the work of the committee will be realized when it is understood that one-third of the entire oil supply of the United States, and from one-fourth to one-fifth of the world's supply of petroleum comes from California. The committee found that at the present time production is falling behind consumption at the rate of 35,860 barrels a day. This excess of consumption over production must be taken from oil already in storage and at the present rate the committee finds that the entire available storage in California will be exhausted by June 1, 1919. If a margin of safety of 10,000,000 barrels of oil be maintained, this margin of safety will be reached by September, 1918. If consumption is materially increased, or if production is decreased, both of which seems likely unless immediate action be taken, but the margin of safety and depletion of the oil supply will take place at a much earlier date.

Importance of California Oil

When it is considered that California fuel oil operates the Panama Canal; the greater part of the steam railroads of Washington, Oregon, California, Nevada, Utah, Arizona and New Mexico; the steamship lines along the Pacific Coast from Mexico to Alaska and across the ocean to Hawaii; the mines and smelters of California and Nevada and Arizona; the cement plants and sugar refineries of California, and a substantial portion of the industrial, manufacturing and agricultural enterprises of the Pacific Coast states of the Union, it will be seen how serious is the situation which confronts the oil producers and consumers. To meet this situation the committee on petroleum makes the following recommendations:

1. That production be increased immediately by additional drilling on the lands which can be developed in the least time with the smallest expenditure of material and labor.
2. That consumption be decreased wherever possible by the diminution of field losses, the highest use of petroleum and its products and the substitution of other forms of fuel or power where possible.
3. That the Federal Government be promptly advised of the situation and asked to render every assistance possible.
4. That manufacturers of oil well supplies and the railroads be directed to expedite the production and transportation of oil well casing, drill stems, wire cables and similar material.
5. That all skilled workmen in the oil fields be exempted from military service.
6. That lands in litigation be developed either through the Federal receivers or through the claimants to the lands, with due regard to the rights of all parties.
7. That additional lands be thrown open for development by the Federal Government.
8. That steps be taken immediately to correlate the transportation facilities of the railroad, steamship, oil pipe line and oil companies that transportation may be expedited.
9. That as far as possible the burning of unrefined petroleum be prohibited.

Shortage of Material Serious

Another and exceedingly serious element that enters into the situation is the shortage of supplies for well drilling. This is especially noticeable in the matter of casing, for the enormous demand for steel and iron for ships and munitions of war has called for every available particle of iron at the mills as well as the ore at the mines. Hundreds of wells that were to have started have been held back because of this lack of material, and in many districts old wells are being denuded of their casing, which is to be used in new ones. The prices of material of all kinds has risen to such high mark that even with a supply it is difficult to see how the producer, especially the small producer, is to make both ends meet if he brings in his well, for there has been no commensurate increase in the price of crude oil at the well. The present price of crude at well is less than $1, and there is not a producing well in the state that can meet this price with the rapidly increasing price of supplies and labor.

Many small companies are holding back their operation until they can be assured of ability to operate with-

out loss. While good oil property is being sought by the big companies, it is more with the idea of holding for future development than with the intention of beginning immediate operation. New territory is being sought, but when found the land is being tied up rather for a safety reserve than for drilling at once. This is especially true of untried, or unproven territory. In many parts of the state "experts" are advising the drilling of wells in places where there may be some oil indication, but where there has never been any development. The latest reports of this kind come from Mono county and from the upper part of the Sacramento Valley.

Since September 30, 1916, the president has, by executive order, withdrawn 937,337 acres of prospective oil lands in Wyoming, Montana, Utah and Colorado. These withdrawals are in addition to the hundreds of thousands of acres previously withdrawn in California and Wyoming and with few exceptions still are tied up and kept from development.

Two Naval shale oil reserves are established by these orders, one of 45,440 acres in Colorado, and one of 86,584 in Utah. There are 709,855 acres of the withdrawn land in Montana, the balance being in Wyoming. The Montana withdrawals apparently cover most of the territory where prospecting has been going on for the past two years.

The withdrawal from entry of the oil shale lands of Colorado and Utah came soon after the announcement in the press that a company had been organized by capitalists for their development.

The shale oil is excellent for every purpose, but it is rather more costly to produce than oil from wells, hence only in a time of high prices is it practical to develop the fields.

During this withdrawal period the president issued five restoration orders, again throwing open to entry 67,345 acres, of which 4695 acres are in California and the balance in Wyoming and Montana. All this restored land has been examined by the United States Geological Survey and declared by its experts to be of no value for the production of oil.

Notwithstanding the handicap placed upon the production, and work of development by the course of the government, and by the further handicap of inability to get supplies promptly and at reasonable cost, the production of the Wyoming-Montana region is expected to be doubled during 1917, as compared with 1916. The development is being pushed on patented lands, those of individuals and school lands of the states. Such is the demand for the oil that a number of big competitive buyers have entered the field, including the Standard Oil of Indiana, the Continental Oil Company, of Colorado, and the Imperial Oil Company of Canada, all former subsidiaries of the Standard of New Jersey.

The Imperial is the last of these to enter the field and its operations have attracted widespread attention. The oil is exported in tank cars to Canada through the customs district of Dakota and it goes to the company's refineries at Regina and Vancouver. At the latter plant it is used in conjunction with the company's own production of light oil from Peru, the supply of which is insufficient for the needs and can be brought to Vancouver with difficulty at present, because the company's ships have been requisitioned for European war service.

More Hysteria and Food Supply

California's productiveness has been the theme of song and story ever since the day "when the Gringo came." In every land praises of the wonderful fruitfulness of California land have been shouted from the housetops, in season and out of season. We have boasted that we were able to feed the whole world and then have some left. Our vast untilled acreages have been held out as the Ultima Thule of all lands, and every effort of state, municipal and private boosters has been to convince the world at large and our own people especially, that all we have to do is tickle the land with a plow and it will bear more than enough.

That is all well and good, and in convincing the world we have convinced ourselves that here can be raised the most, the best and the cheapest agricultural and horticultural products. Our crops are quoted as "magnificent" and our resources are held to be unlimited.

Yet what is the good of it all if our crops are not cared for, if our fields lie untilled for want of labor and if our storehouses are either vacant or given over to the housing of food held by speculators who fatten on our misery?

Last spring the word went forth for everybody to plant potatoes and onions because there was a world shortage. Every available acre of land was planted to beans because the price of that nutricious article went up to a record point and the supply was so limited that everybody was liable to go bean hungry.

What has been the result?

Word comes from the great interior valley of California that potatoes and onions are rotting in the fields because there is no means of transportation whereby the crops can be carried to the waiting hungry ones, even at our own seaboard. All the back and front yards which have been planted to potatoes and onions have given a small supply, yet there has never been a reduction in the price of potatoes or onions in San Francisco.

Now comes the further warning from the Council for Defense of California that the shortage is still real and the people are called upon to cut down their consumption of potatoes and onions for fear that the coming winter will find us with a famine.

To an observer who has seen seasons come and seasons go, with lean years and fat years, with surfeit and famine, it appears that the hysteria of the early days of the war period is still with us. California has always complained of labor shortage in the agricultural districts, and California has always wasted much more fruit, grain and vegetables than she marketed. The present hysteria comes, possibly, from a realization of conditions that have always been with us.

Our farmers complain that they cannot realize sufficient from their production to pay for the seeding and labor; our consumers complain that the prices of farm produce is so high that it is almost prohibitory; our middlemen say nothing. The state has appointed a Market Commissioner, a well meaning, though misguided man, who has taken upon himself the duty of bringing the farmer and the consumer together. His plans seem to have gone awry and everybody (except

the middlemen) is in a bad way, with no apparent relief in sight.

Instead of hysterical warnings to the people, which brings no help, would it not be a better idea for the Council of Defense and the Market Commissioner to get together on some plan whereby the crops of California may be harvested and marketed so that the producer may get reasonable returns and the consumer get the abundant supply at reasonable, living cost?

If the Council for Defense means business it certainly means the full protection of the state and of every individual in it, during this stress. Large sums of money have been appropriated by the legislature for the purpose of carrying out the work on the Council of Defense, and it does seem as if a portion of that money would be wisely expended if it were applied to the transportation of the food that is rotting in the fields, to warehouses in the cities or on lines of transportation, so that it might be conserved for that famine time which the council predicts.

California's industries are at stake under present conditions, the work of years of faithful upbuilding of our manufacturing, agricultural, horticultural and mining industries seems to be as nought before the present crisis. It is time for politician and demagogue to be relegated to the oblivion where they rightly belong and for some man of prescience, some man of soul above personal aggrandizement, some man who places his country above the dollar, to take hold and show a way out of our difficulties. There are hundreds of such men in California, but they are not the men one hears about in the halls of council or reads about in the press. This sort of man is not in evidence because he is not self seeking and because he does not blazen forth his virtues and abilities. But every community knows him. When things are really done it is this man who does them. Then, when the emergency is over he retires into obscurity again until further need calls him forth.

Governor Stephens knows this sort of man and he knows what such a man can accomplish. Let the governor seek out the men of the various communities who have made successes of their own businesses and who have always been helps to their localities, and he will find that they are ready and willing to put their time and energy at the disposal of the state and its people, helping to conserve what we have and to increase the production of the things we need.

It is not always the theorist who knows best what to do and how to do it. The practical man of business may be thought fit for only his line of business, but in all times of stress, the world over, it has been the unknown man who has come out of oblivion and brought success to the country. Because a man devotes his life and energy to a certain line of work it does not necessarily follow that he has not studied other lines nor that he is not capable of taking hold of emergencies in such a way as to bring best results from an apparently chaotic condition.

California faces, today, an industrial crisis, not alone in her food supply but in every branch of every industry. Her petroleum industry is especially hard hit; her lumbering industry is in the toils of schemers; her agricultural industry is in deplorable condition; her manufacturing industry languishes because of uncertainty of material and labor supply; her transportation industry is facing such a crisis as to threaten even the transportation of the necessities of life.

Yet we get nothing better from the authorities who have charge of affairs than an hysterical plea to "eat less food."

It is unnecessary to send forth that plea. We have to eat less food because we cannot buy enough to enable us to eat what we want. What with stagnating business and lowering incomes; what with higher prices and increased taxes, which the consumer must pay for all above him, what with uncertainty as to the future, the people are eating less than they ever ate before, both at home and abroad. The hotels and restaurants have cut down the portions and raised the prices, to bring about a lessening of food consumption. Of course the fact that the hotels and restaurants make money out of the proposition has nothing to do with it. How quickly did they grasp the suggestion and how quickly did they act on it. Dining cars present the spectacle of empty seats on crowded trains because the people cannot get sufficient to appease their hunger unless they submit to extortion. The porters have to work harder because of the many lunch baskets and boxes now carried by passengers who formerly took all their meals while traveling, in the dining cars.

People are eating as little as possible as it is, Messrs Gentlemen of the Council for Defense of California. Maybe not the people who have and are making money out of the distress of the country, but the great mass of citizenry which is only considered when the politicians or the profiteers want something out of them, the solid people of the state and nation, they are "doing their bit" because they have to, and were doing it long before you appealed to them so frantically to stop eating.

Retail merchants have decided to cut down the deliveries to one a day in order to relieve the labor situation. In doing so they have increased the deplorable condition of the people at large by making many more mouths to be fed without the producer. The delivery man who lost his job to reduce the deliveries must eat and his family must eat, just the same, or starve to death. This hysterical idea of reducing deliveries is on a parity with wholesale advice to cut down the eating. It means absolutely nothing and gets us nowhere. Who profits by the reduction of deliveries. Is it the consumer? It certainly is not the delivery man who is out of a job. Prices of commodities have not been lowered because of the reduction of deliveries. It must be, then, that there is a method in this which has for its object the increasing of the revenues of the merchant without commensurate good to the consumer.

Let Governor Stephens get together a body of men, who will gladly serve without pay, to take matters in hand and bring some sort of order out of the chaos which encompasses us, and he will be doing the greatest service possible for his state.

STANDARD DRILLS NEW TERRITORY

A new well is being drilled by the Standard Oil Company in section 7, near the Old Sunset, in a district that has long been idle owing to the fact that in the early days many wells were closed owing to water. The new well is to be completed to the sand at 1400 feet, from the estimates made from other holes in that vicinity. It is located well away from the other wells of the district, and should production be secured that will pay it will prove up a big strip of territory between Pentland Station and Hazelton, where but little has been done in development of oil possibilities.

OIL WELL DRILLING LAW AMENDED

The law regulating the drilling of oil wells, and providing for the protection of oil deposits from damage by infiltrating water and other causes was amended at the last session of the Legislature and there are a number of changes. Few radical changes from previous requirements have been made.

Attention is particularly directed to section 10, which establishes several districts in the state, and provides for the election of permanent boards of commissions. All person assessed under the law are entitled to vote.

Appeals from decisions by the State Oil and Gas Supervisors may be taken to the board of commissioners. Records filed with the supervisor by operators will be open to the inspection of the board. The supervisor is empowered to call meetings of the board for the purpose of obtaining their opinion on questions before him. The Commissioners will receive no compensation, other than actual traveling expenses.

The board of commissioners can serve a most useful purpose to the oil industry by bringing the operators into closer personal touch with the state officers, and giving all parties concerned a better understanding of the work necessary to most economically develop and protect the oil fields. It is, therefore, necessary that the best men available be elected as Commissioners, and we urge that all assessment payers interest themselves in the election. We can, of course, take no part in the selection of individuals further than to suggest that open minded men, familiar with well operations should be chosen.

The first election will be held on the 17th of September, 1917. The State Supervisor is directed by law to fix the time, place and deatils of the elections.

The California State Mining Bureau will be pleased to arrange informal meetings in various towns for the purpose of discussing the necessary details of the election and other matters pertaining to the law. Suggestions as to such meeting places and dates will be welcome.

A list of the assessment payers and the number of their votes will soon be printed and mailed from their office.

For convenience at the election it is proposed that the supervisors shall have ballots printed for each district, and that the names printed on the ballots be determined by petitions filed with the State Supervisor about a month before election. Blank spaces will be provided on the ballot so that other names may be written in. Suggestions as to the advisability and details of such a plan are solicited by R. P. McLaughlin, State Oil & Gas Supervisor.

STRONG OIL MARKET PREDICTED AFTER THE WAR

Sinclair's Magazine, the first number of which will soon appear, contains an article on the oil market after the war, which says, in part:

"Foreign supplies of petroleum products at the end of the war will be extremely low and until they are replenished the prices obtaining in foreign fields will be relatively high. A quick resumption of private consumption may be expected, and as prices decline the rate of this consumption will increase until it again reaches normal, thereby acting as a stabilizer of prices. It is almost inconceivable, therefore, that there could be a shutdown of foreign demand for American oil supplies.

"The fact is well known that domestic consumption of petroleum products has been and is increasing at a tremendous rate, and no one imagines it will not continue to increase when peace is restored. Certainly, if there is no gain in the domestic rate of production the time will soon come when our own market can easily absorb the entire American output, leaving nothing for export.

"The chief question to determine in forming an opinion as to future prices, therefore, is not the volume of consumption, but rather the volume of available supply. The question cannot be answered satisfactorily. About all that can be said with confidence is that the development of new oil fields of consequence appears more probable in other countries than in the United States, and about the only permissible conclusion as to future prices is that present indications point to strong markets, with the American producer in the most favorable position."

OIL LITIGATION SKY BRIGHTENS

It looks as if there had come a turn for the better in the oil situation in California.

A victory was won by California operators in the decision handed down by the United States Court of Appeals on August 20, which will nullify litigation instituted by the government to obtain possession of California oil lands under the Taft withdrawal order. If this decision be sustained by the Supreme Court, and there is every reason to believe that such will be the case, it means that many companies will benefit thereby.

In setting aside the receiverships of the Consolidated Mutual and the North American Oil Companies, owned by Louis Titus and associates, the court held that where there was occupation of oil lands coupled with diligent prosecution of work prior to the withdrawal order, which led to the discovery of oil or gas subsequent to September, 1907, the government could not regain possession of the land. It was also determined that where it was proven that there was development on a quarter section of a location, that would apply to the entire holding.

The government's contention that proof had to be made of actual drilling of wells prior to September, 1907, is "too narrow a view to take of the statute," according to the ruling of the Court of Appeals. It was charged that the location notices were filed in the land office by dummies whose interests were acquired by J. M. McLeod and L. B. McMurtry, who later sold the property in Kern county for several million dollars. Judge Erskine M. Ross, in the opinion, says, "There is not the slightest showing of fraud or lack of good faith on the part of the applicants or their predecessors in interest."

Judge William H. Hunt concurs with Judge Ross, and Judge Gilbert dissents. The United States will appeal the matter to the Supreme Court.

The effect of this decision, if sustained, will be far-reaching and will mean that much of the land now lying idle will immediately become active producer of much needed oil.

ASSOCIATED MAKING DEVELOPMENTS

Reports from the Santa Maria fields say that the Associated Oil Company, which some months ago took over several thousand acres of the Casmalia Oil Syndicate, in the Casmalia district, is planning extensive improvements on its holdings. The plans include the sinking of forty wells, the work on the rigs of some of these being now in progress. The Associated is deepening two wells in the Casmalia area.

California Derrick

The Oil Authority of the Pacific Coast

PUBLISHED MONTHLY
—BY—
The California Derrick Publishing Company
DR. CLARENCE E. EDWORDS .....Editor
E. L. MACKEY ..... Business Manager

OFFICES
509 Sansome Street, San Francisco, California
Telephone Garfield 1432

Subscription price, per year, $2.00 Foreign $2.25
Advertising Rates on Application
Entered as second-class matter February 17, 1912, at the postoffice at San Francisco, Cal., under the Act of March 3, 1879.

THE DERRICK'S CREED

The California Derrick has no axe to grind, no company to promote, no stocks to sell, no "interests" to bow to. Not dominated by any company, but faithful to California's Oil Industry.

WHAT OF OUR BOYS?

A wave of patriotism sweeps over the country, if we are to believe the fulsome article of the daily press lauding to the skies the noble actions of the sons of our wealthy men, of the prominent "society" men who have held a butterfly existence dancing attendance on the danghters of those high in commercial circles. From these articles one might well imagine that the war with Germany is to be fought by these men, who are taking the thousands of sturdy young men from the shops and farms and counters of the land, along with them for the purpose of watching these favorites of fortune suppress the enemy.

It is easy for the young man in the limelight of social preeminence to bask in the adulation of his friends and of the press. He is really giving a very little by going to war, and as a rule he goes because he wants to flaunt the title of "Captain" or "Lieutenant" before the admiring females of his set. But the young man who leaves his work upon which his family depends for the very food they eat sees no path to glory over a glittering roadway of shoulder straps. He receives no complimentary notices in the press for his bravery. He knows that in treading the pathway to glory that leads but to the grave he is doing his best to help his country, with no hope of reward other than that of a duty well done.

Is it not time for our people to wake up from their delusions as to the real Democracy of our country? Where is the Democracy which starts our war with a class distinction, and which puts a premium on the idle who go out for a lark, while the earnest, honest and faithful humble boy is ignored, or, worse, looked upon with contempt because his hands are toil stained and have never known the manicure's gentle touch.

Every day the papers tell of the trivial actions, the sometimes silly escapades of the young men who have had the good fortune, if it may so be called, to be born of parents who have money. Does it never occur to these newspapers that all over the land there are fathers, mothers, sisters and brothers, as well as friends of the young man from the fields, shops and factories, who are just as eagerly watching for a word from their loved ones? Why give all the space to one class and ignore the other?

Let us get away from this adulation of those who are going to fight for us. Let us start with more sanity and we will certainly achieve greater results. And in this achievement the poor boy is the one who will give the best account of himself.

ENGLAND NEEDS OIL

Francis E. Powell, chairman of the Anglo-American Oil Co., who arrived at an American port recently, says: "What Americans should realize is that England is down to a ration basis. There is nothing superfluous being imported. That would be impossible with the shortage of ships. All the oil that goes to England is carefully apportioned; most of it going to the army and navy. The oil consumption will greatly increase in the fall when the tractors start work on the farms. Great Britain expects to increase its arable acreage by 3,000,000 acres.

"The tractors, most of them American machines, will use kerosene. The problem is to supply the oil. We are importing at the maximum now. The only solution will be to further curtail the domestic consumption. No private automobiles are allowed to use gasoline, and use of petroleum for lighting or other household purposes is limited. We are desperately in need of oil tankers.

"America is giving magnificent assistance. This year English shipyards will turn out over a million tons of ships, but while this is better than in the last two years, it is about 50 per cent below normal output."

CALIFORNIA OIL FIELDS HAVE DEEP WELLS

Some of the deepest wells in the United States are to be found in California, a few of them exceeding 5000 feet, yet West Virginia has distanced this figure with the Home Natural Gas Co.'s well in Harrison county, the drill having reached a depth of 7100 feet, a remarkable feature being that an 8-inch hole has been carried to the depth stated. Following the early arrival of wire cable and casing the company will case the well with 8-inch and commencing again will drill a 6-inch hole, the intention being to reach a depth of 8000 feet or more.

The People's Gas Co., operating in Washington county, Pa., has a drilling well 7200 feet in depth, and expects to increase this by several hundred feet if deemed necessary.

MINE CONGRESS FORMING A PETROLEUM SECTION

The American Mining Congress is endeavoring to organize a special section devoted to the interests of oil, which it considers to be a branch of mining inasmuch as it is a mineral in development. Henry Mace Payne of New York, a prominent mining engineer and active member of the congress, has been in California some weeks and has been putting much of his spare time to visiting oil operators and endeavoring to interest them in the work of the congress. Within the limited time at his disposal, he has met with considerable success and expects the work will be continued through correspondence after his departure.

The American Mining Congress was organized some 20 years ago, and it has grown into a thoroughly nation-

al body with a large and influential membership, including such mining leaders as Herbert C. Hoover and John Hays Hammond. It has become a leading factor in shaping legislation for the mining industry.

WARNS PUBLIC AGAINST FAKE GEOLOGISTS

Washington, D. C.,—It sometimes happens that men who have no connection with the Geological Survey of the Interior Department pass themselves off as members of that organization, either to invest themselves with unmerited importance or to obtain information or facilities that might otherwise be denied them. It should be generally known to the public that each member of the Federal Geological Survey carries an identification card signed by the Secretary of the Interior and the Director of the Survey, and he is always ready to produce this card on request, should there be any question of his official standing.

DEVELOPING NEW FIELD

Development work in the oil fields around McKittrick and west of there is progressing in an encouraging manner. Receipts of rig timber, casing and other supplies at the McKittrick yards is quoted as fair, and the building of derricks in the Bellridge Lost Hills district goes on at a rapid rate. Much material is being received at McKittrick for the syndicate which is proposing to operate in the Carrisa Plain, it being presumed that work will start in the new district in a very short time. It is understood that the syndicate is looking about for other property west of its holdings in the Carrisa Plains.

Much interest is being shown in the country adjacent to and west of the San Juan ranch, and the country has been overrun with scouts who have been close mouthed while making their examinations. It is believed that this part of the state is due for something big in the way of discovery before long. Every indication from a surface and geological standpoint indicates that this whole country is underlaid with oil bearing sands but waiting development to bring in a new and rich territory.

OPEN BIDDING FOR OIL AGREED UPON

Los Angeles—After a conference in the chambers of United States District Judge Bledsoe recently, in which Judge Bledsoe, Howard M. Payne, receiver of the oil properties involved in the action brought by the Government against the Southern Pacific, H. C. Booth, representing the Southern Pacific Company, and representatives of several oil-buying concerns, took part, it was announced that a new policy had been agreed on for the sale hereafter of the oil placed on the market or delivered under contracts of sale.

Heretofore secret bids have been received by the receiver and it was left to his discretion, supplemented by that of the court, to approve such bids.

There is now such a demand for petroleum that those who have not heretofore been able to get any oil under what is known as the secret bid process, are united on the proposition that there should be open bidding for the oil—the highest bidder to get the output.

Secret bids will be receivd for oil at so much per barrel above the market price, which is fixed by the Standard Oil Company, and on a day designated the bids will be opened. The receiver will then announce the name of the highest bidder and what figure he offers. If there is any oil dealer or user willing to pay a higher rate, all he has to do is to indicate the size of his bid and how much he wants at that price.

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JULY PRODUCTION SHOWS BIG GAIN

The July field report covering operations east of the Rocky Mountains as summarized by the "Oil City Derrick," shows a heavy increase in production over all previous months this year, although the number of completions were smaller than in July.

Deducting dry hole sand gassers, 1409 producing wells were brought in, with an aggregate output of 130,336 barrels, or 6275 barrels more than the June new production. The addition, which consisted of lighter grades of crude, came wholly from Kansas, Oklahoma and the Pennsylvania division, there being a falling off in all other divisions, though some of them showed very little change. The report is looked upon as very favorable for a future increase in production, though the addition depends upon the large wells of the mid-continent and the further extension of the pools there. At the close of the month there were 4273 rigs and wells drilling, an increase of 149 over the June figures.

The features of the month were gusher wells in Kansas and the striking of a number of large producers in several districts in Oklahoma. The scarcity of material is still holding back operations and attracting the attention of operators more to the shallow fields. The drouth is also still felt in some parts of the western fields.

Kansas operators were active during July, and notwithstanding the scarcity of material, completed 318 wells, a gain of 70 over the June figures. As among the completions were the gushers in Towanda township the new production amounted to 38,912 barrels, an increase of 12,316 barrels. The good staying qualities of the Kansas wells and the large prospective area undeveloped make this state a favorite hunting ground for the oil producer.

Oklahoma was ahead of Kansas in July, both in the increase in completions and the amount of new production. The state is credited with 577 completions, a gain of 44 over June, and with 39,546 barrels of new production, or 13,167 barrels more than the previous report. One feature of the new production is that it is widely scattered over the oil belt of the state and in a few instances shows important extensions. Large wells were found at Yale in Wagoner county, and the Blackwell district also in the Cleveland and Jennings districts in Pawnee county. A wildcat well in western Noble county started at 500 barrels, and evidently opens an important pool.

The Pennsylvania fields were fairly active during July with 466 completions, accredited with a new production of 3958 barrels. As compared with June there was a loss of 51 wells completed, but a gain of 1120 barrels in new production.

BIG MUDDY OIL FIELD

One of the most important developments which occurred in the oil producing situation of the country was announced during the week with the bringing in of additional gusher wells in the Big Muddy field.

These wells, one of which is located to the north and the other to the south of the field, together with the recent wells brought in at the extreme east and west of the Merritt Oil Corporation properties prove an oil bearing acreage in the Big Muddy dome more than 6000 acres in extent, most of which belongs to the Merritt Oil Corporation. This makes the field rival in extent the Salt Creek

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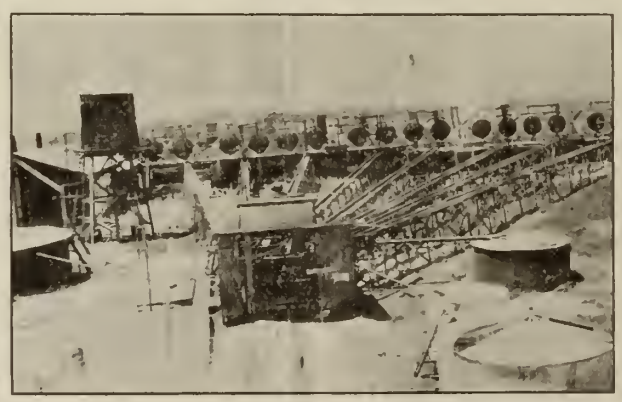

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field of Wyoming, which has been considered one of the most remarkable oil fields in the United States.

The well brought in on the Merritt property in its initial flow made the largest production attained by any well thus far brought in in Wyoming.

The well located on Section 16 to the south of the field, is understood to be controlled by the Ohio Oil Co.

The actual measurements of these new wells cannot be determined until proper facilities are arranged for taking care of their production, which should be within the next few days.

Next to the value to the Merritt Oil Corporation in proving oil lands which have been estimated to be worth more than $199,000,000, is the importance of this new source of high-grade oil at a time when supplies in other high-grade fields are becoming seriously depleted.

HIGH GRADE OIL AT CASMALIA

Devlopment work of the Associated Oil Company, E. J. Doheny and others in the Casmalia district has demonstrated that oil of high grade is to be found in this field which has heretofore been regarded solely as a low gravity proposition.

Two new wells brought in recently by the Doheny Pacific Company, on lease No. 2, with an average daily production of 500 barrels each, showed by test 16 degree oil. This is the highest grade of oil recorded in this new field, the other oils found there ranging from 12 to 14 degrees.

The first oil discovered in this district was of a very low grade and then there came a 12 degree oil. This new discovery of 16 degree oil gives to the district three distinct grades. As a result of finding this oil operators are more sanguine than ever as to the future of the district and hopes are entertained of finding even higher grade on land yet to be drilled.

A third big well was added to the first of the producers in the Casmalia district at about the same time that the Doheny Pacific producers were brought in. It was completed by the Union Oil Company on the Escolle lease, part of the old Pinal Dome property recently taken over by the big company. This well is good for about 500 barrels a day and the gravity compares favorably with that of the Doheny producer. The Union well was completed about a month ago, but owing to lack of tankage and pipe lines it was not put in operation at once.

DEATH OF D. G. SCHOFIELD

Demetrius G. Schofield, chairman of the board of directors and former president of the Standard Oil Company, committed suicide on July 30, at the home of his son-in-law, C. O. Flint, in Oakland. It is believed that the act was prompted by grief over the loss of his wife, some five years ago, accentuated by the recent death of his daughter. Mr. Schofield has been in ill health for some time, having broken down immediately after his wife's death. He was 74 years old, having been born in New York City. He came to the Pacific Coast in 1870 when he became interested in the oil business with Tevis in The Pacific Coast Oil Company. This company was taken over by the Standard in 1900 and in 1906 its name was changed to the Standard Oil Company of California. Mr. Schofield, who was vice-president of the Pacific Coast Oil Company, became vice-president of the Standard Oil Company of California in 1906. In 1911 he was elected president and continued in this capacity until 1917, when he became chairman of the board of directors.

WILL EXPLORE NEW FIELD FOR OIL

Wide speculation has been aroused over many transfers of land west of San Miguel. In each instance the purchasers have been Edna M. Wilcox and Walter J. Clune of San Francisco. These buyers are now in possession of practically the entire township. The lands are between San Antonio creek on the north and the Naciemento river on the south. On the San Antonio creek, just across the county line, an old oil well known as Kings, was sunk a few years ago and further south is the old Cavanaugh well. These were abandoned after a futile effort to get oil but it is evident that new prospecting will be done there in the near future. This area contains asphaltum beds of large area.

OIL WORKERS WANT EIGHT-HOUR DAY

For some time there has been an agitation among oil workers against the 12-hour tour, and even before the tendency for higher prices in the industry was apparent there was considerable talk on this subject. The fact that the 12-hour day established in the beginning of the industry was too long was always evident, but the fact that work on an oil well, to be profitably conducted, must be continuous made it necessary that if any change were made it would have to be three 8-hour shifts. Several companies have granted the request for 8-hour shifts, but several which did so have returned to the 12-hour tour. The Standard, one of the biggest employers of men in the field, has an 8-hour day. There is now an oil workers union in the fields with a membership of more than 7000. A vote is being taken on the 8-hour proposition.

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NATURAL ASPHALT YIELD OF STATE ZERO

Within the last few weeks the old Alcatraz natural asphalt mine, in northern Santa Barbara county, once a scene of much activity, has been entirely dismantled and the driers and other equipment removed by a company dealing in second-hand machinery. The mine has been idle for several years and virtually abandoned by its owners in San Francisco since the wide competition of asphalt manufactured from oil rendered its operations no longer profitable. The high value now prevailing for machinery of every kind drew the attention of the junk men to the equipment.

At the very time that the old California natural asphalt mine is being thus dismantled, there comes from Washington a statement of the United States Geological Survey covering the asphalt production of the entire country, in which it is set forth that the total quantity of natural asphalt produced during 1916 was 98,477 short tons, value $923,281, an increase of 22,726 tons, as compared with 1915, in quantity and of $376,791 in value. None of this natural asphalt came from California.

While the California natural asphalt industry has been completely blotted out, the state during 1916 produced asphalt manufactured from its crude oil to the quantity of 257,933 short tons, and to the value of $1,958,946. This manufactured asphalt comprised about 40 per cent of the total quantity manufactured in the United States from domestic petroleum, and about 30 per cent of the value thereof. The total output of the United States manufactures of asphalt from domestic crude during 1916 was 688,334 short tons, value $6,178,851. The prices are figured f. o. b. at the refinery and California manufacturers must sell at a figure that will allow for the high freight rates on all transcontinental shipments.

HIGH PRICES HURT OIL TRADE WITH CHINA

Consul General Anderson says high prices have reduced the consumption of American kerosene all over China and at the same time have led to a stimulus in the import of Japanese kerosene, which, by reason of short hauls at low freight rates, has been able to enter the Hongkong field under exceptionally favorable conditions. Trade in East Indian oil has also been hurt, but in many ways the East Indian concerns have an advantage over American competitors in the South China field, although perhaps not in China as a whole. American oil is selling in Hongkong at substantially the same price in Hongkong currency it sold a year ago—that is, for a standard grade, at $5.20 local currency or $2.94 gold per case of ten gallons. But the increase in price in gold due to exchange is shown by the fact that the same price in Hongkong currency a year ago brought only $2.57 gold. Nevertheless, the present prices apparently are below replacing costs. The Chinese in the interior are turning to bean and peanut oil for relief from the present high prices. In Hongkong, Canton and the few cities and towns with electric light service they are turning to electric light so far as possible. The present situation seems likely to have a considerable permanent effect upon the kerosene trade in south China.

PETROLEUM SHIPMENTS FROM MEXICO

Declared exports of crude oil and petroleum products from the Tampico consular district to the United States in June amounted to 2,719,530 barrels, according to a report made by Consul B. G. McHenry. The movement from Tampico was 2,041,944 barrels and from Tuxpam 677,576 barrels. Shipments to points other than the United States were reported as 821,776 barrels. The gross shipments, therefore, reached 3,541,296 barrels.

Tampico shipments included refined products as follows: Kerosene, 48,000 barrels; distillate, 435,000; reduced crude, 494,000, and topped crude 73,000. As heretofore, Tuxpam shipments include only crude oil, the topping plants at that port not being ready for operation. Bunker oil carried from Tampico during the month of June, 1917, amounted to 94,500 barrels.

COLORADO HAS LARGE OIL OUTPUT

The quantity of petroleum marketed in 1916 from the oil fields of Colorado was 197,235 barrels of 42 gallons each, a decrease of 11,240 barrels, or 5 per cent from the output in 1915, according to J. D. Northrop of the United States Geological Survey.

The average price received for this oil at the wells was $1.10 a barrel, and the total market value of the output was $217,139, a gain of 22 cents in average unit price and of $33,654, or 18 per cent, in total market value over 1915.

Preparations were completed in 1916 by the Urado Oil Company for the erection of a small refinery near its oil property in the western part of Garfield country.

MANY MEN EMPLOYED AT FULLERTON

From estimates recently made the seventeen oil companies operating in the Fullerton field have close to 1000 men in their employ, and the combined payroll of the field runs close to $125,000 a month.

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OIL CONSERVATION NEEDS SHOWN

One of the most prominent places in the forthcoming book of the United States Bureau of Mines is to be given to the report of petroleum production and the pressing needs for conservation of oil supplies. In this report a probable future production of 7,402,000,000 barrels of oil is estimated from known and prospective oil lands.

The following extracts from this work give an idea of the tremendous problems confronting the petroleum industry today:

At our present rate of consumption our estimated supplies are sufficient to meet our present needs for a comparatively short period, conservatively estimated to be from 25 to 30 years, taking no account of the increasing demand for petroleum and its product. This estimate not only includes the oil fields already known and developed, but makes liberal allowance for undiscovered fields in prospective oil territories.

A good measure of the accuracy of these estimates which were made more than a year ago by the Geological Survey, is the development for crude petroleum, and more territory was prospected and more wells drilled in search of petroleum in the midcontinent fields than in any previous year.

This country is producing about two-thirds of the world's production of crude petroleum, and has produced approximately 2,750,000,000 barrels since the discovery of oil in 1859. Our future supply from both proved and prospective oil fields based on geological possibilities, is estimated to be approximately 7,402,000,000 barrels, which will last us only about twenty-five years at our present rate of consumption. We are exporting 20 per cent of our production, using approximately 25 per cent as fuel under boilers and of the remainder probably one-fourth is wastefully utilized. Thus 70 per cent in all is being used in a manner that must be considered anything but conservative for so valuable and so scarce a product.

As an example of wasteful utilization, three-fourths of our artificial gas is made from petroleum, notwithstanding the fact that coal has been and is used for this purpose, and would be used altogether except for the reason that the gas manufacturer is able to buy petroleum cheaper. At the present rate of production, it is estimated that our coal supply is adequate for more than 3000 years. Clearly we should not use our petroleum for fuel under boilers or for gas manufacture, or in any way to compete with coal, when the oil supply is so limited.

Gasoline is indispensable to our present industrial progress. At the present time there is a greater demand for gasoline than for kerosene fuel oil, or any of the other petroleum products. There are now over 3,000,000 automobiles in use in the United States. The manufacturers are turning out approximately 2,000,000 new machines this year, and expect to increase the number each succeeding year. The average consumption for each automobile is more than ten barrels of gasoline a year, and it is estimated that this country will need more than 2,000,000,000 gallons of gasoline for the year 1917. Where is this gasoline coming from?

The situation can be partly met by converting some of the less valuable products of crude oil into gasoline. The Bureau of Mines early realized the importance of this conversion and during the past year one of its chemical engineers, Dr. Walter F. Rittman, discovered a cracking process by which gasoline, as well as benzine, toluene and other desirable products can be made from kerosene and other crude oil distillates. Other cracking processes have been invented, but they have been privately owned and not readily available to the small refiner. The Bureau of Mines plans to make the Rittman process available to every user under conditions protecting the public's interest, not only in the original process, but in all improvements in connection with it.

It is estimated that during 1915 2,000,000 barrels of gasoline were made by cracking processes, some refineries obtaining as high as 35 per cent of gasoline from some oils. During the year 1916 it is estimated that 5,000,000 barrels of gasoline was made from oil that in the past did not enter into the making of gasoline.

The Bureau of Mines for a number of years, realized the importance of taking steps to introduce methods by which wells may be drilled more economically and with less waste of oil and gas, to increase the amount of oil that may be extracted from an ordinary formation, and above all, to conduct investigation that will bring about a greater efficiency in the utilization of this precious commodity. To carry on work along these lines, the petroleum division of the Bureau of Mines was organized, and up to July 1, 1917, had spent about $100,000 in this work.

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JULY OIL FIELD NEWS

The "Standard Oil Bulletin" says that notwithstanding the fact that increased drilling activity resulted in the completion of more producing wells than in any monthly period since August, 1912, production during July, averaging 259,266 barrels per day, exceeded the figure recorded for June by only 289 barrels per day.

For the various fields in California it is shown that seventy-four new wells were completed during the month, yielding an initial daily production of 11,955 barrels 76 new rigs are up, 385 wells are drilling and 5 wells abandoned during the month. The report also shows that there are 7749 producing wells with a daily production of 259,266 barrels.

Total crude oil stock, July 31, 1917 were 35,781,323 barrels and total shipments from fields 9,276,183 barrels.

Crude oil prices at the well effective July 28, 1917, are still in force.

TO HUNT PETROLEUM

Los Angeles.—The Amalgamated Oil Company has commenced the erection of a rig for its first test well on 1200 acres just east of the city limits on Boyle Heights. The site of the well is near the end of Brooklyn avenue. The land is leased from the Huntington Land & Water Company. The terms of the lease have not been given out, but it is known that the owning company has talked to wouldbe leasers of one-seventh royalty and a big bonus.

The land is within the region where the Pan-American Petroleum and Transport Company has acquired some 2000 acres of prospective lands. It is within a mile or so of the old Dollar well, drilled to more than 3000 feet some years ago.

NEW WELL BROUGHT IN

After drilling for months on the North McKittrick front, eight miles northwest of McKittrick the Sunhead Oil Company has put a well on the beam, with an initial production of 75 barrels a day. The gravity of the oil is 13 degrees. When the company spudded in this well more than a year ago it was announced that twenty-five wells would be drilled in the event that the test proved successful and now that such a promising outlook has been obtained, it is thought the original plans will be carried out, in view of the recent increased demand for petroleum. The new well is approximately 1800 feet deep and is located not far from several producers whose output ranges from 75 to 100 barrels a day.

ABANDONING MIDWAY LEASE

The old Los Angeles Midway property will soon be returning to a sterile waste. The derrick has been dismantled and the casing is being pulled from the well. It is claimed that this territory never had indications that warranted the drilling of a well.

KERN BRINGS IN TWO WELLS

All the properties of the Kern Trading and Oil Company are now being listed in field reports as Southern Pacific Company. With the change of name has come in two wells on section 1, 32-23, with a production of 500 barrels a day from one and 300 barrels daily from the other. No. 57 well is doing 500 and No. 59 is doing a little better than 300 barrels. Both wells are flowing from a sand about 3000 feet deep. No. 18 well, on section 9, 32-24, in the Buena Vista hills, started flowing recently and has every indication of being a good producer.

TO DRILL IN MONO COUNTY

W. W. Stabler, an oil well expert from Los Angeles, and a number of associates have decided to test the oil possibilities of Mono County, Cal. For years there has been much talk of oil seepages, indications, shale, croppings, etc., in the vicinity of Mono Lake. According to the report Stabler found many indications of a light, parafine base oil.

DEVELOPMENT DECREASES WATER SUPPLY

Increased operations in the Midway field have made extraordinary demands on the water supply system of the Western Water Company, and the supply has now become insufficient to meet the demands of drilling companis in the field.

The total production of the Shell Oil Company in the Coalinga field is now 19,000 barrels a day. The output has been increased by the bringing in of a new well on section 2, with a flow of 1000 barrels a day, which has maintained that rate ever since it came in. The oil tests 29 degrees.

Fullerton.—Considerable interest has been aroused in the local oil field over a new method of shutting off water that is to be tried out by the Fullerton Great West Oil Co. The plan is to run an eight and a quarter inch liner in the well and cement off the water with the liner. The experiment will be made unless the State Oil and Gas Commissioner refuses to indorse the method.

Washington.—More petroleum was produced in Kansas in 1916 than in any other year in the history of the petroleum industry in that state. According to statistics just completed under the supervision of J. D. Northrop, of the United States Geological Survey, 8,738,077 barrels of crude petroleum were marketed from wells in Kansas in 1916. This quantity is nearly double the output in any preceding year and exceeds the output in 1915 by 5,639,660 barrels or 228 per cent.

News has reached this city that H. J. Pollak, an engineer well known in this city as a former member of Roosevelt's Rough Riders, had struck a large producing oil well on land in the Maricopa oilfield, owned by P. Welch. This well, which is under full control, is producing 6000 barrels of oil daily.

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